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LISTS

OF THE

DREDGING STATIONS

OF THE

UNITED STATES FISH COMMISSION

FROM

1871 TO 1879 INCLUSIVE,

WITH

TEMPERATURE AND OTHER OBSERVATIONS.

[ARRANGED FOR PUBLICATION BY SANDERSON SMITH AND
RICHARD RATHBUN.]

[EXTRACTED FROM THE ANNUAL REPORT OF THE COMMISSIONER OF
FISH AND FISHERIES FOR 1879.]

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1882.

BRIDGING STATIONS

UNITED STATES DEPARTMENT OF COMMERCE

1917 TO 1918 INCLUSIVE

TERMINALS AND OTHER STATIONS

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U. S. COAST AND GEODETIC SURVEY

000.—LISTS OF THE DREDGING STATIONS OF THE UNITED STATES FISH COMMISSION FROM 1871 TO 1879, INCLUSIVE, WITH TEMPERATURE AND OTHER OBSERVATIONS.

[Arranged for publication by SANDERSON SMITH and RICHARD RATHBUN.]

The following lists include all the recorded dredging stations made by, or in connection with, the United States Fish Commission, from its organization up to date. The stations are, for the most part, arranged chronologically, and are designated by four series of numbers or letters, as follows: One series of numbers, from 1 to 87, with letters appended, represents the stations for 1871. The 1872 stations (in the Bay of Fundy) are designated by letters from *t* to *z*. Those for 1873 are indicated by a second series of numbers, from 1 to 212, with B. (Bache) or Bl. (Bluelight) added, according as the dredgings were carried on from the steamers Bache or Bluelight. In this series, however, are also included the stations of the Bache for 1872 and 1874, as well as those for 1873. The last series combines all the stations from 1874 to 1879, inclusive (omitting 1876, during which year sea-work was suspended), in numbers running from 1 to 769. For the sake of obtaining greater uniformity in recording the stations on charts, as explained further on, the stations for 1874 and 1875, originally numbered separately, have been united with those from 1877 to 1879, and given numbers following 1879. The numbers for these later years run as follows: 1874, from 400 to 580; 1875, from 600 to 769; 1877, from 1 to 128; 1878, from 129 to 238; 1879, from 239 to 378.

A chart has been prepared by Mr. Smith to illustrate the dredgings of the Commission north of Cape Cod, exclusive of those of 1872 in the Bay of Fundy; those of the Bache, on the Banks, in 1872; and of the Speedwell, off the coast of Nova Scotia, in 1877. On this chart the stations of the Speedwell for 1877, 1878, and 1879 are indicated by numbers only, and are readily distinguished from those of the Bache and Bluelight, which have B. or Bl. affixed to them. In such of the following tables as refer to this chart, the localities given are taken from the original record books, whenever such exist (*i. e.*, for all the work of the Speedwell and much of that of the Bluelight—101 Bl. to 166 Bl.), with some other notes added to facilitate the finding of the localities on the chart. In many cases the positions were marked, at the time, on the steamers' charts by the commanding officer, and all such positions have been adopted, even though differing somewhat from those given by the record books. From the nature of the operations of dredging and trawling, it becomes almost impossible to estimate exactly the changes of position caused by currents, &c., especially when out of sight of land, and in a

few cases the positions were not placed on the charts at the time, and the bearings given do not suffice to fix them very accurately. It is believed, however, that but few positions laid down on the chart are rendered uncertain to any great extent by either of these causes. A large part of the positions determined by the Bache were originally given by latitude and longitude. The other latitudes and longitudes given in the tables are taken from the accompanying chart, and are intended to serve as the readiest means of finding the localities, all of which are either thus designated or are referred to as being near others, which are so. Of the dredging stations *north of* Cape Cod, Nos. 79 B to 97 B, 37 to 123 are outside of the limits of the chart. These, and all others of the *northern stations*, not placed upon the chart, are marked with + before the serial number. The bearings given for the Speedwell's work in 1879 are true; the others, with a few (unrecognizable) exceptions, are magnetic.

In the last column of the tables the letter indicates the apparatus employed in dredging: D., Dredge; Ag. D., Agassiz Dredge; R. D., Rake Dredge; T., Trawl; Ag. T., Agassiz Trawl; O. T., Otter Trawl; Tan., Tangles.

STATIONS FOR 1871, IN AND ABOUT VINEYARD SOUND, MASSACHUSETTS.

During this, the first year of the Commission, the dredgings in shallow water were made partly from a sail-boat, and partly from a steam-launch, and those in the deeper waters, from the United States revenue-cutter *Moccasin*, Capt. J. G. Baker. The dredging stations numbered in all about 250, but to avoid confusion in laying them out on the chart, they were combined into 87 groups or lines, each including from 2 to 9 stations, the lines being designated by numbers, the stations by letters. In this manner they were represented on the large chart accompanying the Report of the United States Fish Commissioner for 1871-'72. In making up the present list the same arrangement has also been followed, and where all the stations of a group were of the same nature, they have been located collectively; otherwise the exact position of each station has been given.

Dates are not prefixed to all of the inner groups, as many of these include stations made on different days. Temperature observations (with Miller-Casella self-registering thermometers) were taken at most of the outer stations, as recorded in the list, but were omitted at the inner ones. The dredge was the implement most commonly used for scraping the bottom, but the beam-trawl was also frequently employed on the smooth inner grounds. The rake-dredge was worked a few times off Gay Head, and the tangles very rarely, in only a few places. The characters of the many localities gone over in 1871, as well as the species of animals found inhabiting them, are fully discussed in the "Report upon the Invertebrate Animals of Vineyard Sound and the adjacent waters, with an account of the physical characters of the region," by Prof. A. E. Verrill; contained in the Report of the United States Fish Commissioner, Part I, for 1871-'72.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
1	1871.						
2	June 30	<i>a, b.</i> Off Little Harbor, Wood's Holl.	1½-2	Covered with eel-grass			
3	July 11	<i>a, b, c.</i> Off Great Harbor, Wood's Holl, from south of buoy R. No. 4 to Great Ledge.	2-3½	Rocky, small stones.			
4	June 30	<i>a, b, c, d, e.</i> Beginning nearly the same as No. 3 and extending to beyond buoy R. No. 2.	2½-9½	Rocks, gravel, &c.			
5		Wood's Holl:	3½-12½	Rocks, small stones, &c.			
6	July 20	<i>a, b.</i> Southeast of Nonamesset Island.	3½-5½	Sand, gravel			
		<i>c, d.</i> Between Nonamesset Island and Great Ledge.	3½	Rocks, stones, dead shells.			
		<i>e.</i> Off Mink Point, Nonamesset Island.	8½	do			
		<i>f, g.</i> Mouth of Great Harbor.	5½-9½	do			
		Vineyard Sound:					
		<i>a, b.</i> Between Nobska Point and Falmouth.	2-3	Covered with eel-grass			
		<i>c.</i> Between Nobska Point and Falmouth.	3-5	Gravel and shells.			
		<i>d.</i> About ½ mile south of Falmouth.	4½	do			
		<i>e, f.</i> Between Falmouth Harbor and Western end of L'Homme Dieu Shoal.	5½-9	do			
7		<i>a.</i> Lackey's Bay, Vineyard Sound.		Covered with eel-grass			
8	June 30	<i>b, c, d.</i> Lackey's Bay, Vineyard Sound.		Gravel.			
9	June 29	<i>a, b, c, d, e, f, g.</i> Vineyard Sound, off Nonamesset Island and Wood's Holl.	7-10	Rocks, gravel, small stones.			
10	July 24	<i>a, b, c, d.</i> Vineyard Sound, south of Little Harbor, Wood's Holl, ½ to 1½ miles from Nobska Point.	7-12	Rocks.			
		Wood's Holl:					
		<i>a, b, c.</i> Passages between Nonamesset and Naushon Islands.	1½-2½	Soft mud			
		<i>d.</i> Hadley Harbor	3½	do			
		<i>e, f.</i> Between Long Neck and Nonamesset Island.	3-6½	Hard gravel			
11		Wood's Holl Passage:					
		<i>a, b, c.</i> Off Nonamesset Island.	3½-4½	Fine gravel, dead weeds.			
12		<i>d, e, f, g.</i> Off Uncatena Island	3½-5	Sand, stones			
13		<i>a, b, c.</i> Wood's Holl Passage, between Long Neck and Nonamesset Island.	2½-5½	Sand, gravel			
14		<i>a, b.</i> Mouth of Great Harbor, Wood's Holl, from off Bar Neck wharf to midway between Mink Point and Parker's Neck.	1½-7	Gravel, &c.			
		Wood's Holl, in the passage-way to the east and south of Ram and Bluff Islands:					
		<i>a, b</i>	3½-5½	Rocky			
		<i>c, d</i>	2½-5½	do			
		<i>e, f, g.</i> In Great Harbor	5-10	Rocky, sand			
15		<i>a, b, c.</i> Wood's Holl, buoy No. 3, Middle Ledge to Lone Rock Spindle.	¾-2½	Gravel, small stones, shells			
16		<i>a, b, c.</i> Great Harbor, Wood's Holl, near buoys No. 12 and 14.	1½-14	Rocks			
17		Mouth of Great Harbor, from Bar Neck to east of Nonamesset Island.	1½-14½				
		<i>a, b</i>		Mud and eel-grass			
		<i>c, d, e, f</i>		Rocks, &c.			
18	July 24	<i>a, b, c, d.</i> Mouth of Great Harbor, from off Bar Neck wharf to midway between Parker's Neck and Nonamesset Island.	2½-12½	Hard gravel.			
19		<i>a, b.</i> Mouth of Great Harbor, between Parker's Neck and Lone Rock Spindle.	1-8½	Gravel, mud, weeds			
20		<i>a, b, c.</i> Mouth of Great Harbor, between Nonamesset Island and Parker's Neck.	1½-6½	Gravel, &c.			
21	June 27 } June 28 }	<i>a, b, c, d, e.</i> Vineyard Sound, southeasterly from Nobska Point about ¾ mile; all near together.	6-10	Rocks, gravel, small stones.			
22		Vineyard Sound, between Nobska Point and Falmouth Harbor.	4-5½				
		<i>a, b, c</i>		Stones, dead shells.			
		<i>d</i>		Sand, gravel			

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
23	1871. June 30	<i>a, b, c, d, e, f.</i> Between Nobska Point and Falmouth, and south of Falmouth, about 1 mile.	4½-10	Gravel, small stones, shells.	.....	.....	.....
24	July 3	Vineyard Sound: <i>a, b.</i> About 1½ miles south of Falmouth.	5½-10	.....	.....	.....	.....
	July 8	<i>c, d.</i> North of west end of L'Homme Dieu Shoal.	5-13	.....	.....	.....	.....
25	.....	<i>a, b, c, d, e.</i> Vineyard Sound, between Waquoit Bay and Falmouth.	3-5	Sand, shells, eel-grass.	.....	.....	.....
26	.....	<i>a, b, c, d, e.</i> Vineyard Sound; a line of dredgings parallel to No. 25, and from ¾-1 mile further south.	5-13	Gravel, shells.	.....	.....	.....
27	.....	<i>a, b.</i> Vineyard Sound, about midway between the western part of L'Homme Dieu Shoal and the mainland.	5½-13	Sand; shells, eel-grass.	.....	.....	.....
28	July 20	Vineyard Sound: <i>a, b.</i> Off western entrance to channel between L'Homme Dieu Shoal and Hedge Fence.	5-6	Sand, stones, sea-weeds.	.....	.....	.....
		<i>c, d, e, f.</i> South of western end of Hedge Fence.	10-12	Sand, gravel, small stones.	.....	.....	.....
29	.....	<i>a, b, c.</i> Vineyard Sound; a line parallel to, and just south of, eastern half of Hedge Fence.	5½-12	Gravel, &c.	.....	.....	.....
30	.....	<i>a, b, c.</i> Mouth of Vineyard Haven, between East and West Chop.	5-7	Sand, eel-grass, algæ.	.....	.....	.....
31	July 20	Vineyard Sound: <i>a, b.</i> Between Hedge Fence and East Chop.	10-13	Sand, gravel, small stones.	.....	.....	.....
		<i>c, d, e.</i> North of East Chop and off Vineyard Haven.	9-11½	.....do	.....	.....	.....
32	.....	<i>a, b, c.</i> Vineyard Sound; line running east and west, north of eastern half of Hedge Fence.	11-12½	Gravel, &c.	.....	.....	.....
33	.....	Vineyard Sound: <i>a, b.</i> South of eastern end of L'Homme Dieu Shoal.	5½-13½	.....do	.....	.....	.....
		<i>c, d.</i> Southeast of same shoal.	5-8½	.....do	.....	.....	.....
34	.....	<i>a, b, c, d, e, f.</i> Vineyard Sound, between eastern end of L'Homme Dieu Shoal and Wreck Shoal.	5-7	Gravel, hard mud, sand.	.....	.....	.....
35	.....	<i>a, b, c, d, e.</i> Vineyard Sound; line running east and west between Wreck Shoal and 1 mile off Waquoit Bay.	4-7½	Gravel, shells.	.....	.....	.....
36	.....	<i>a, b, c, d.</i> Nantucket Sound, between Wreck Shoal and Horse-Shoe Shoal.	4½-15½	Astrangia, sponges, &c.	.....	.....	.....
37	.....	Vineyard Sound, off north side of Martha's Vineyard and nearly parallel with the shore, distant from shore ¼-½ mile: <i>a, b, c, d.</i> Between Martha's Vineyard and Middle Ground.	5-11	Gravel, stones, rocks.	.....	.....	.....
		<i>e, f, g.</i> Off West Chop.	9-13	Rocks, sand.	.....	.....	.....
		<i>h, i.</i> Off East Chop.	4½-9	Sand, stones.	.....	.....	.....
38	.....	Vineyard Sound: <i>a.</i> About ½ mile north of center of Middle Ground.	10-14	Gravel.	.....	.....	.....
		<i>b, c.</i> Just off center of Middle Ground.	9½-13½	.....do	.....	.....	.....
39	June 29	<i>a, b.</i> Vineyard Sound, about midway between Nobska Point and Middle Ground.	12-13½	Stones, gravel.	.....	.....	.....
40	.....	<i>a, b, c, d.</i> Vineyard Sound, between Wood's Holl and Middle Ground.	10-13	Gravel, stones, sand.	.....	.....	.....
41	.....	Vineyard Sound: <i>a.</i> About 1½ miles east of Nobska Point.	4½-6½	Small stones.	.....	.....	.....
		<i>b.</i> About 1½ miles southeast of Nobska Point.	10-12	.....do	.....	.....	.....
42	July 17	<i>a, b.</i> Vineyard Sound, off Tarpaulin Cove.	10½-15½	Gravel.	.....	.....	.....
43	.....	Vineyard Sound: <i>a, b, c.</i> Line of dredgings off northern half of Naushon Island, parallel to shore, distant about ½ mile.	10½-13½	Gravel, hard sand.	.....	.....	.....
		<i>d.</i> Continuation of same, ⅔ mile off Nonamesset Island.	10½-11½	Gravel.	.....	.....	.....

Serial num- ber.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
44	1871.	<i>a, b, c, d, e.</i> Vineyard Sound; line about parallel to last, off northern half of Naushon Island, about 1 mile from shore.	10½-15½	Gravel			
45		<i>a, b.</i> Vineyard Sound, off Quick's Hole.	6½-8½	Coarse gravel, shells			
46		Vineyard Sound, off the Elizabeth Islands.	7-14½				
		<i>a, b.</i> Off Pasque Island		Sand, shells			
		<i>c.</i> Off Robinson's Hole		do			
		<i>d, e.</i> Off south end of Naushon Island.		Sand, shells, and gravel			
47		<i>a, b, c, d, e.</i> Vineyard Sound, off west side of Martha's Vineyard, between Menemsha Bight and Cedar Tree Neck, ½ to 1½ miles from shore, and nearly parallel to it.	10-17½				
		<i>a, b, c, d.</i>		Black mud, dead mus- sels, &c.			
48		<i>e</i>		Sand			
		<i>a, b, c, d.</i> Vineyard Sound, same as last, ¾-1 mile from shore, and extending about 1½ miles both north and south of Cape Higgon.	4½-11	Sand, gravel, shells			
49		Vineyard Sound:					
		<i>a.</i> About northeast of Gay Head, 4½ miles.	7½-13				
		<i>b.</i> About west of Lucas Shoal, 1½ miles.	5-6				
50		<i>a, b.</i> Vineyard Sound, Menemsha Bight.	4-8				
51		Vineyard Sound, Menemsha Bight:					
		<i>a, b, c</i>	1½-2½	Mud, fine sand			
		<i>d</i>	4½	do			
		<i>e</i>	6-9	do			
52	July 14 } July 17 }	<i>a, b, c, d.</i> Vineyard Sound, north of southwestern extremity of Martha's Vineyard, ½-1 mile from shore (<i>c, d</i> , off Menemsha Bight).	10-12	Sand			
53	July 14	<i>a, b, c, d, e.</i> Vineyard Sound, north and northeast of Devil's Bridge, Gay Head, ¾ to 1 mile from shore.	5-12	Sand, rocks			
54		Vineyard Sound, north of Gay Head:					
		<i>a.</i> About 1½ miles from shore	16½	Mussels			
		<i>b.</i> About 2½ miles from shore	14-15½	do			
55	July 22	<i>a, b, c.</i> Vineyard Sound, north of Devil's Bridge, Gay Head, ¾ mile.	6½-13½	Rocky, dead mussels, &c.			
56	July 22	<i>a, b, c, d.</i> Vineyard Sound, northwesterly from Gay Head, about 1 mile.	5-11	do			
57		<i>a, b, c, d, e.</i> About same position as last, forming a line about ½ mile further off.	5-13½	Rocky			
58		<i>a, b, c, d, e.</i> Vineyard Sound, northwesterly from Gay Head, 1½-2 miles.	10-16				
		<i>a, b, c</i>		Rocky			
		<i>d</i>		Mud, dead mussels			
59		<i>a, b, c.</i> Vineyard Sound, northwesterly from Gay Head, ¾-1½ miles.	5½-11½	Rocky			
60		<i>a, b, c.</i> Vineyard Sound, northwesterly from Gay Head, 1-2 miles.	6-11½	do			
61		<i>a, b, c.</i> Vineyard Sound, northwesterly from Gay Head, 1-2 miles; more easterly than 60.	5½-13½	do			
62		<i>a, b, c.</i> Vineyard Sound, northwesterly from Gay Head, 1-2 miles; more easterly than 61.	5½-16½	do			
63		<i>a, b, c, d.</i> Vineyard Sound, north of Devil's Bridge, Gay Head, ¾-1 mile.	6-8½	Rocks, sand, shells			
64	July 12	Buzzard's Bay, Cataumet Harbor:					
		<i>a.</i> In harbor	3½	Sand, eel-grass			
		<i>b.</i> At mouth of harbor	3½-4½	do			
65		<i>a, b.</i> Buzzard's Bay, off Cataumet Harbor.	4½	do			
66		<i>a, b.</i> Buzzard's Bay, between Long Neck and Quamquisset Harbor.	5-6½	Hard sand			
67	July 24	<i>a, b.</i> Just outside of 66.	5-6½	Sand, mud			
68		Buzzard's Bay, west of Quamquisset Harbor:					
		<i>a.</i> About 2 miles	7½	Fine sandy mud			
		<i>b.</i> About 1 mile	7½	do			
		<i>c.</i> About ¾ mile	6-7	Mud			
69		<i>a, b.</i> Buzzard's Bay, west of Quamquisset Harbor, about 1½ miles.	5½-7½				

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
70	1871.	<i>a, b, c, d.</i> Buzzard's Bay, westward of Quamquisset Harbor, about $1\frac{1}{2}$ – $2\frac{1}{2}$ miles.	7 $\frac{1}{2}$	Sand, gravel, stones			
71		<i>a, b.</i> Wood's Holl Passage, between Long Neck and Uncatena Island.	3 $\frac{1}{2}$ –6 $\frac{1}{2}$	Fine gravel			
72		<i>c, d.</i> West of Long Neck, $\frac{1}{2}$ – $\frac{3}{4}$ mile.	3 $\frac{1}{2}$ –6 $\frac{1}{2}$	Rocks, hard sand			
73		<i>a, b, c, d.</i> Buzzard's Bay, northward from Woepecket Island, $1\frac{1}{4}$ –2 miles, forming a line running about northeast and southwest.	7 $\frac{1}{2}$ –8 $\frac{1}{2}$				
		Buzzard's Bay, north of northern part of Naushon Island:					
		<i>a, b, c.</i> Parallel and near to shore from Uncatena Island to south of Woepecket Island.	6 $\frac{1}{2}$ –10 $\frac{1}{2}$	Sand, mud			
		<i>d.</i> About west of Woepecket Island, $\frac{1}{2}$ mile.	6 $\frac{1}{2}$	Rocks			
		<i>e, f, g.</i> Northwesterly from Woepecket; <i>e</i> , $\frac{1}{2}$ mile; <i>f</i> , 1 mile; <i>g</i> , $1\frac{1}{2}$ miles.	7 $\frac{1}{2}$ –8 $\frac{1}{2}$	Sand and muddy sand.			
74		<i>a, b.</i> Buzzard's Bay, northward of Woepecket Island, $1\frac{1}{4}$ – $2\frac{1}{4}$ miles.	7 $\frac{1}{2}$	Mud			
75		Buzzard's Bay, forming a line of dredgings parallel to the Elizabeth Islands and distant from them $\frac{3}{4}$ –1 mile.	7–9				
		<i>a, b, c.</i> Off Naushon Island.		Blue mud			
		<i>d, e.</i> Off Pasque Island		do			
		<i>f, g, h.</i> Off Cuttyhunk Harbor.	3 $\frac{1}{2}$ –5				
76		<i>a, b, c.</i> Buzzard's Bay, between Quick's Hole and Lono Rock.	3 $\frac{1}{2}$ –8 $\frac{1}{2}$	Gravel, dead weeds, &c			
77		<i>a, b, c, d, e, f.</i> Quick's Hole, between Pasque Island and Nashawena Island.	5 $\frac{1}{2}$ –8 $\frac{1}{2}$	Rocks, gravel, sand			
78		<i>a, b, c, d, e.</i> Buzzard's Bay, off northern entrance to Robinson's Hole.	3 $\frac{1}{2}$ –7 $\frac{1}{2}$				
		<i>a</i>		Mud, eel-grass, and dead weeds.			
		<i>b</i>		Black mud			
		<i>c</i>		Blue clay			
79		In channel between Chappaquiddick Island, Martha's Vineyard, and Hawe's Shoal:					
		<i>a.</i> Northern part of channel	3 $\frac{1}{2}$ –4 $\frac{1}{2}$				
		<i>b.</i> Southern part of channel	4 $\frac{1}{2}$ –5				
80	Sept. 12	Southeasterly from Martha's Vineyard, $3\frac{1}{2}$ to 9 miles:					
		<i>a.</i> 10 miles south from Cape Poge	16 $\frac{1}{2}$	Sand and silicious sponges.	64		60
		<i>b.</i> 13 miles south from Cape Poge	18 $\frac{1}{2}$	Sand	64		59
		<i>c.</i> $1\frac{1}{2}$ miles west of <i>b</i>	21	Sandy mud.	61.5		59
81	Sept. 12	South of Martha's Vineyard, 5 to 8 miles:					
		<i>a.</i> Southeast of Gay Head, $12\frac{1}{2}$ miles.	16 $\frac{1}{2}$	Sand			
		<i>b.</i> Southeast of Gay Head, 8 miles	16 $\frac{1}{2}$	do			61
82	Sept. 9	South and southwest from Gay Head, about 5 miles; northwest of Norman's Land:					
		<i>a.</i> 5 miles south-southwest of Gay Head.	8–12	Gravel and stones.			
		<i>b.</i> 5 miles south of Gay Head.	16	do			62
83		<i>a, b, c, d.</i> Vineyard Sound, off Gay Head, parallel to No. 58, and slightly more distant from shore.	10–16	Rocky			
84	Sept. 11	South and southwest of Gay Head:					
		<i>a.</i> $1\frac{1}{2}$ miles southwest of Gay Head.	13	Rocks, gravel			
		<i>b.</i> 4 miles southwest of Gay Head	16 $\frac{1}{2}$	Sandy mud.			
		<i>c.</i> $2\frac{1}{2}$ miles a little west of south of Gay Head.	12	Rocks, gravel			
		<i>d.</i> $3\frac{1}{2}$ miles a little east of south of Gay Head.	7	do			
85	Sept. 9	West of Gay Head, 2 to 5 miles:					
		<i>a.</i> 3 miles; <i>b</i> , $3\frac{1}{2}$ miles; west of Gay Head.	15 $\frac{1}{2}$	Sand	67		63
		<i>c.</i> 4 miles west of Gay Head.	18	Soft, sticky mud	62		58
		<i>d.</i> 1 mile north-northwest from <i>c</i>	19	do	62		57
		<i>e.</i> 5 miles a little north of west from Gay Head.	11	do	63		59
86	Sept. 13	West-southwest of Gay Head, 10 to 13 miles:					
		<i>a.</i> 13 miles west-southwest from Gay Head.	25	Gravel, sand, with some mud.			
		<i>b.</i> $10\frac{1}{2}$ miles west-southwest from Gay Head.	25	do	64		

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		
					Air.	Surface.	Bottom.
87	1871. Sept. 14	a. 19½ miles west-southwest of Gay Head.	29	Sandy mud.....			
		b. 18½ miles west-southwest of Gay Head.	29	....do		62	59

STATIONS FOR 1872, WITH HEADQUARTERS AT EASTPORT, ME.

The dredgings for 1872 were mostly carried on from a large sail-boat; but those in the deeper waters of the Bay of Fundy were made from the United States revenue-cutter *Mosswood*, Captain Hodgdon. The regions explored were about as follows: Eastport Harbor, South Bay, and Passamaquoddy Bay, all of which are comparatively shallow-water areas; the shallow waters about the island of Grand Menan, especially those among the small islands to the east of Grand Menan; and the deeper waters east of Campobello Island, west of Grand Menan; and toward the center of the Bay of Fundy, between Grand Menan and Nova Scotia.

In connection with the shallow-water dredgings no complete record of observations was kept, but the collections made were appropriately labeled with the precise locality, depth of water, nature of bottom, &c. The more important hauls in deep water, mostly accompanied by temperature observations, are as follows, the letters used to designate them being the same as were employed in the original records:

Serial letter.	Date.	Locality.	Depth in fathoms.	Temperatures.		
				Air.	Surface.	Bottom.
+t.	1872. Aug. 24	Bay of Fundy, off Grand Menan, beginning at a point 8 miles SE. by E. of north end of White Head Island, and running NE. for a distance of nearly 3 miles. (Temperatures taken at the beginning and close, and the same at both.)	106-90	°	° 48	° 38
+t'.	...do ...	Bay of Fundy, off Grand Menan, north of last; beginning 8½ miles E. of White Head Island, and extending about 2 miles SW.	96-100	.....	.....	37½
+u.	Aug. 23	Bay of Fundy, E. of Grand Menan, about 2½ miles E. of north end of White Head Island.	28-52	.....	53	39½
u'.	...do ...	Bay of Fundy, E. of Grand Menan, 1½ miles E. by S. ¾ S. of north end of White Head Island.	29	.....	.....	44
+v.	Aug. 28	Grand Menan channel, west of Grand Menan Island; 2½ miles NNW. ¾ W. of Southern Head, G. M.	40	.....	48	45½
+v'.	...do ...	Grand Menan channel, west of Grand Menan Island; 4½ miles NNW. ¾ W. of Southern Head, G. M.	54	.....	47	40
+v''.	...do ...	Grand Menan channel, west of Grand Menan Island; 6 miles N. ¾ W. of Southern Head, G. M.	55	.....	.....	40
+w.	Aug. 16	Bay of Fundy, about 3½ miles east of Herring Cove Head, Campobello Island. (Soft muddy bottom.)	60	.....	.....	43
+w'.	...do ...	Bay of Fundy, just off Herring Cove, Campobello Island.	27	.....	.....	46
+z.	Aug. 2	Bay of Fundy, 2½ miles, about SE. of Head Harbor Light, Campobello Island.	90	.....	48½	39½
+z'.	...do ...	About 2½ miles ENE. of Head Harbor Light, Campobello Island.	77	.....	.....	42
+z''.	...do ...	About 1½ miles NE. of Head Harbor Light.	70	.....	.....	46
+z'''.	...do ...	Midway between Head Harbor Light and Spruce Island.	33	.....	48	45
+y.	Aug. 5	Passamaquoddy Bay, off North Harbor, Deer Island.	25	.....	57½	47
+z.	...do ...	Passamaquoddy Bay, ¼ miles north of last.	32	.....	58	46

STATIONS FOR 1873, WITH HEADQUARTERS AT PEAK'S ISLAND, CASCO BAY, MAINE; AND ALSO STATIONS OF THE UNITED STATES COAST SURVEY STEAMER BACHE FOR 1872, 1873, AND 1874, IN THE GULF OF MAINE, &c.

In this list the dredgings indicated by the above heading have been grouped together, as they appear on the chart prepared for publication. Numbers ranging from 1 B. to 78 B. were originally assigned to the Bache dredgings for 1873 and 1874, in papers published by Professor Verrill in the *American Journal of Science* for April, 1874, and June, 1875, and elsewhere. To these the dredging stations of the Bache for 1872, 18 in number, have been added, thus increasing the list to 97 B. As to the regular series of dredgings made by the *Bluelight*, under command of Lieut. Commander L. A. Beardslee, in and off Casco Bay, no serial numbers were given to the hauls until the commencement of the temperature observations, July 21. To the numbers (1 to 66), given to such of the subsequent hauls as were accompanied by temperature observations, 100 has been added (101 Bl. to 166 Bl.), and numbers from 167 Bl. to 190 Bl. have been given to the hauls from July 12 to July 21, and from 191 Bl. to 212 Bl. to those taken after July 20, but not included in the temperature series. The descriptions of localities from 101 Bl. to 166 Bl. are taken from the record books for temperatures, with some additions, and from 167 Bl. to 212 Bl. from the eight books of dredging lists, which were kept. Additions to 101 Bl. to 166 Bl., taken from the dredging books, are marked D. L.

The dredging stations of the Bache for 1872 were on and about Saint George's Bank and La Have Bank, and extended as far as Halifax, N. S.; in 1873 they were mostly in the Gulf of Maine, especially in the region of Jeffrey's and Cashe's Ledges, a few being made in Massachusetts Bay; those for 1874 were entirely in the Gulf of Maine.

DREDGINGS BY THE BACHE, 1873.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.		Apparatus used.
							Air.	Surface.	
1B.....	Sept. 3	43 30	69 22	Off Monhegan Island.....	52	Soft gray mud.....	58	55 { 42 44	°
2B.....	do	43 30	69 22	7 miles SW. from Monhegan Island.....		Soft mud.....	58	55 { 42 44	°
3B.....	do	43 38	69 17	8 miles S. from Monhegan Island.....	64	Mud and sand.....	56	54 { 43 44	°
4B.....	do	43 37	69 05	13 miles SE. by S. from Monhegan Island.....	60	Brown mud, sand.....	60	55 { 43 45	°
5B.....	do	43 37	68 59	17 miles SE. from Monhegan Island.....	72	Brown mud.....	60	54 { 43 44	°
6B.....	do	43 38	69 01	15 miles SE. from Monhegan Island.....	82	do.....			°
7B.....	do	43 38	69 01	do.....	82	Mud and gravel.....	56	55 { 39 40	°
8B.....	do	43 36	68 32	18 miles SE. by S. from Matinicus Rock.....	94	Sticky brown mud.....	56	57 { 40 41	°
9B.....	do	43 36	68 24	23 miles SE. from Matinicus Rock.....	107	do.....	56	57 { 40 41	°
10B.....	Sept. 4	43 34	68 27	22 miles SE. by S. from Matinicus Rock.....	104	Soft brown mud.....	56	57 { 40 41	°
12B.....	Sept. 13	43 20	68 33	Jeffrey's Bank.....	60	Brown mud.....	56	54 { 40 41	°
13B.....	do	43 23	68 30	do.....	105½	do.....	58	54 { 40 41	°
14B.....	do	43 23½	68 40	do.....	80	do.....	62	60 { 42 43	°
15B.....	do	43 23	68 44	do.....	72½	do.....	60	58 { 42 47	°
16B.....	do	43 19	68 49	do.....	79	do.....	62	58 { 40 41	°
17B.....	do	43 15½	68 54	SW. from Jeffrey's Bank.....	100	Brown mud, gravel.....	59	57 { 52 53	°
18B.....	do	43 15½	69 06	do.....	106	Brown mud.....	58	56 { 40 41	°
20B.....	Sept. 16	43 01	70 10	15 miles SE. from Boon Island Light.....	95	Mud.....	58	58 { 37 40	°
21B.....	do	42 49	68 50	Cashe's Ledge.....	52-90	Rocky.....	52	57 { 43 44	°
22B.....	do	42 52	69 23	56 miles E. of Cape Ann.....	90	Blue mud.....	52	56 { 40 43	°
23B.....	do	42 52	69 35	47 miles E. of Cape Ann.....	118	Mud.....	54	57 { 39 39	°
24B.....	do	42 56	70 09	E. of Jeffrey's Ledge.....	114	Soft mud.....	59	57 { 39 39	°
24*B.....	do	42 56	70 17½	6 miles farther W.....	114	do.....	58	58 { 36 40	°
25B.....	do	42 28	70 44	3½ miles SE. from Halfway Rock.....	29	do.....			°
26B.....	do	42 32½	70 50	Salem Harbor.....	6	do.....			°
27B.....	do	42 40	70 27	Jeffrey's Ledge, 6 miles E. of Thatcher's Island Lights.....	24	Gravel and stones.....	57	58 { 46 48	°
28B.....	do	42 41½	70 24½	8 miles E. by N. of Thatcher's Island Lights.....	26	do.....	57	58 { 46 48	°
29B.....	do	42 47½	70 20½	14 miles NE. by E. ¼ E. from Thatcher's Island Lights.....	33	do.....	70	54 { 49 49	°
30B.....	do	42 26	70 35	Massachusetts Bay.....	50	Soft mud.....	60	58 { 42 45	°

DREDGINGS BY THE BACHE, 1873—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.			Apparatus used.
							Air.	Surface.	Bottom.	
31 B.	42 19	70 29	Massachusetts Bay.....	56	Mud.....	62	60	{ 41 1/2 44	o
32 B.	42 19	70 23	West of Stellwagen's Bank.....	29	Hard, rocky.....	64	58	{ 48 1/2 50 1/2 50 1/2	o
33 B.	42 20	70 18	On Stellwagen's Bank.....	22	.....do.....	64	.....	{ 48 1/2 50 1/2 50 1/2	o
34 B.	42 22	70 11	East of Stellwagen's Bank.....	44 1/2	Sand.....	61	.....	{ 44 1/2 44 44	o
35 B.	42 08	70 15	Between Stellwagen's Bank and Race Point.....	34	.....do.....	59	57	{ 48 50 50	o
36 B.	42 18	69 49	2 1/2 miles ENE. 1/4 N. from Race Point.....	142	Soft blue mud.....	60	58	{ 39 50 42	o
37 B.	42 20	70 00	1 1/2 miles NE. from Race Point.....	117	.....do.....	.....	.....	.....	o

No record exists of any hauls corresponding to Nos. 11 B. and 19 B.

DREDGINGS BY THE BACHE, 1874.*

38 B.	Sept. 2	42 48 1/2	70 37	Thatcher's Island Light, about 10 miles south.....	41	Soft blue mud.....	70	66	45	
39 B.	do.	42 51 1/2	70 36 1/2	Thatcher's Island Light, about 13 miles south.....	48	Mud.....	70	69	45 1/2	
40 B.	do.	42 54 1/2	70 35 1/2	Thatcher's Island Light, about 16 miles south.....	43	Blue mud.....	70	69	47	
41 B.	do.	42 57 1/2	70 35	Thatcher's Island Light, about 18 1/2 miles south.....	36-27	Mud and rocks.....	70 1/2	69	47 1/2	
42 B.	Sept. 3	43 05 1/2	70 20	Boon Island Light, NW. by W. 1/2 W. 6 miles.....	68	Brown mud.....	69 1/2	67	52 1/2	
43 B.	do.	43 04 1/2	70 28	Boon Island Light, N. by E.; hotel on Isles of Shoals, SW. by W. 3/4 W.....	43	.....do.....	75	65	47	
44 B.	do.	43 00 1/2	70 35	Star Island, SW.; Duck Island, W.....	25	Rocky.....	75	67 1/2	51	
45 B.	Sept. 4	43 05	70 11 1/2	Boon Island Light, WNW. 1 1/2 miles.....	88	Soft mud.....	65	67	40	
46 B.	do.	43 03	70 04	Agamenticus Mountain, NW. by W. 1/4 W.....	51	Hard sandy mud.....	65	69 1/2	42	
47 B.	do.	43 02 1/2	70 03	Jeffrey's Ledge, near No. 46 B.....	25	Sand and gravel.....	64	56 1/2	45 1/2	
48 B.	do.	43 01 1/2	70 03 1/2	Jeffrey's Ledge, near No. 47 B.; Agamenticus Mountain, NW. 3/4 W.....	36	Gravel.....	64	56 1/2	47 1/2	
49 B.	do.	43 02 1/2	69 52	Boon Island Light, WNW. 27 miles.....	113	.....	64	65	40	
50 B.	do.	43 01 1/2	69 45	W. of Cashe's Ledge.....	105	Mud and gravel.....	60	56	40	
51 B.	Sept. 5	42 56	69 08	Cashe's Ledge.....	100	.....	60	55	41	
52 B.	do.	42 51	68 52 1/2	do.....	27	Rock and gravel.....	60	55	42	
53 B.	do.	42 51	68 50	do.....	73	Soft mud.....	63	55	42	
54 B.	do.	42 49	68 48 1/2	Off SE. edge of Cashe's Ledge.....	110	Mud.....	61	61	42	
55 B.	do.	42 53 1/2	68 53 1/2	Cashe's Ledge.....	40	Gravel.....	60 1/2	65	43	

56 B.	do	42	52	68	54	do	30	do	62	59	40
57 B.	do	42	51	68	52	do	37	Rocky	do	do	do
57 B.	do	42	51	68	52	do	39	do	do	do	do
58 B.	do	43	51	69	05	NW. of Cash's Ledge	65	Mud and gravel	60	57	40
59 B.	do	43	22	69	17	do	92	Mud	61	55	41
60 B.	do	43	17	69	24	do	65	Mud and sand	61	57	41
61 B.	Sept. 6	43	17	69	24	Booth Bay Harbor, Maine	3	do	64	58	51
62 B.	do	43	51	69	38	Pemaquid Point, N. 10 miles	48	do	62	62	47
63 B.	Sept. 7	43	40	69	27	Punkin Island, NW. 4 miles	42	Brown mud	68	65	48
64 B.	do	43	43	69	30	Pemaquid Point, N. 12 miles	58	Mud	61	57	42
65 B.	do	43	35	69	22	Monhegan Island, E. by N. 2 miles	47	Soft mud	64	59	44
66 B.	do	43	44	69	22	Monhegan Island, NE. $\frac{3}{4}$ E. 14 miles	65	Brown mud and gravel	66	64	40
67 B.	Sept. 8	43	34	69	31	Sequin Island Light, N. 8° W. 19 miles	86	Brown mud	68	64	40
68 B.	do	43	25	69	31	Sequin Island Light, NW., near No. 67 B.	91	Mud	64	59	40
69 B.	do	43	11	69	32	On Platt's Bank	92	Sand	64	60	46
70 B.	do	43	03	69	30	do	91	Mud	61	58	40
71 B.	do	42	55	69	36	E. of Jeffrey's Ledge	96	Brown mud	61	57	39
72 B.	do	42	57	69	50	W. of Jeffrey's Ledge	125	do	62	59	40
73 B.	do	42	58	70	09	do	102	do	62	60	39
74 B.	do	43	01	70	09	do	88	do	64	64	40
75 B.	do	43	02	70	15	do	92	do	64	63	42
76 B.	do	43	03	70	25	SW. of Boon Island	51	Mud and gravel	64	63	42
77 B.	do	42	58	70	33	White Island Light, E. $\frac{3}{4}$ S. 3 $\frac{1}{2}$ miles	33	Rocky	69	65	44
78 B.	Sept. 12	43	04	70	39	Agamenticus Mountain, NW. by N. $\frac{1}{2}$ N., near Jeffrey's Ledge	35	Blue clay, mud, sand	61	60	43

* The surface temperatures taken this year were quite unreliable, in consequence of an erroneous method of observation.

DREDGINGS BY THE BACHE, 1872.

[The letters preceding the serial numbers are the same used to distinguish the hauls in Smith and Harger's Report on the Saint George's Bank Dredgings (Trans. Conn. Acad., vol. iii), and in Professor Verrill's papers in American Journal of Science. The bottom temperatures this year are quite unreliable, manifestly too high in general.]

+a	79 B.	Aug. 29	41	40	68	10	On northwest part of Saint George's Bank	25	Soft sand	do	do	do
+b	80 B.	do	41	40	68	10	do	30	do	do	do	do
+c	81 B.	do	41	25	66	45	East of Saint George's Bank	23	Coarse sand	do	do	do
+d	82 B.	Aug. 31	41	25	66	24	do	50	Sand and shells	66	62	45
+e	83 B.	Sept. 16	41	25	65	58.3	do	61	do	58	58	58
+f	84 B.	Sept. 15	41	25	65	50.3	do	65	Dead shells	64	60	55
+g	85 B.	do	41	25	65	42.3	do	439	Sand, gravel, stones	66	65	51
+h	86 B.	Sept. 12	42	53	64	51.3	On La Have Bank	45	Gravel and stones	64	61	36
+i	87 B.	do	42	44	64	36	South of La Have Bank	69	Gravel, stones, sponges	62	62	do
+j	88 B.	Sept. 11	44	30	63	30	Off Chebucto Head, Nova Scotia, entrance Halifax Harbor	29	Mud and fine sand	do	do	do
+k	89 B.-91 B.	do	42	05	67	49	Off northwest border of Saint George's Bank	110	Soft mud and sand	56	49	49
+l	92 B.	do	42	03	67	49	do	85	do	56	55	49
+m	93 B., 94 B.	do	42	00	67	42	Off north border of Saint George's Bank	45	Coarse sand	do	do	do
+n	95 B.	do	42	06	67	31	do	40	do	do	do	do
+o	96 B., 97 B.	do	42	11	67	17	Off northeast border of Saint George's Bank	150	Soft sandy mud	52	52	52
+p	98 B.-100 B.	do	do	do	do	do	(There are no hauls corresponding to these numbers)	do	do	do	do	do

DREDGINGS BY THE BLUELIGHT, 1873.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.			Apparatus used.
							Air.	Surface.	Bottom.	
101 Bl.	July 21	43 32	70 05½	Cape Elizabeth Light, NW. ¼ W.; Portland Head Light, N. by W. Stockman's Island, W.; Upper Flag Island, E. by S.	24	Gravelly.	°	51	44½	T.
102 Bl.	July 22	43 44	70 03½	Casco Bay, Stockman's Island, W.; Upper Flag Island, E. by S.	16-22½	Sandy.	°	57	50	
103 Bl.	do	43 42	70 03½	Casco Bay, Broad Sound, Bates Island, W.; Eagle Island, E.	22-34	Gravel, br. shells.	°	52	48	
104 Bl.	July 24	43 44	70 08	Casco Bay, Luckses' Sound.	12½	Muddy.	80	56½	46½	
105 Bl.	do	43 41½	70 08	Casco Bay, Broad Sound, between Stockman's and Little Birch Islands.	10½	Fine sand.	84	62	49½	
106 Bl.	do	43 41½	70 08	Casco Bay, Broad Sound, between Eagle and Bates Islands.	21	Gravel.	80	65	45½	
107 Bl.	July 26	43 41½	70 08	Casco Bay, Broad Sound, between Stockman's and Upper Flag Islands.	10½	Sand.	68	56½	47½	
108 Bl.	do	43 41½	70 08	do.						
109 Bl.	do	43 41½	70 08	Casco Bay, Bluelight Cove (channel between Peak's, Great and Little Hog Islands).	3	Muddy.	60½	59	56	
111 Bl.	July 27	43 40	70 12	Casco Bay, Bluelight Cove, off Eyegreen Landing.	3	do	61½	60	56	
112 Bl.	July 28	43 40	70 12	Casco Bay, Bluelight Cove, off Eyegreen Landing.	11½	Hard.	65	59	52	
113 Bl.	do	43 39½	70 13½	Portland Harbor, between Fort Gorges and Fort Preble.	3	Muddy.	65	60	56	
114 Bl.	do	43 39½	70 13½	Bluelight Cove.	3	do	66	62	58	
115 Bl.	do	43 39½	70 13½	do.	13	do	66	62	58	
116 Bl.	July 29	43 39½	70 13½	do.	2	do	66	60	57	
117 Bl.	do	43 39½	70 13½	Casco Bay, Broad Sound, between Bates and Eagle Islands.	16-22	Gravel and sand.	67	60	49½	
118 Bl.	July 30	43 43	70 05½	Casco Bay, Broad Sound, between Little Bangs and Slave Islands.	9½-12	Soft gravel, br. shells.	66	60	53	
119 Bl.	do	43 43	70 05½	Casco Bay, Broad Sound, between Stockman's and Little Birch Islands.	17 (14½)	Sand, gravel, shells.	66	60	53	
120 Bl.	do	43 43	70 05½	Bluelight Cove.	13	Muddy.	68	64	60	
121 Bl.	do	43 43	70 05½	do.	2	do	70	66	61	
122 Bl.	do	43 43	70 05½	Portland Light, SSW. ½ of a mile.	13½	Sandy.	69	59½	49½	
123 Bl.	July 31	43 38	70 12½	Bluelight Cove.	2	Muddy.	71	62	58	
124 Bl.	do	43 38	70 12½	do.	2	do	66	62	59	
125 Bl.	do	43 42	70 07	do.	2	do	62	60	56	
126 Bl.	Aug. 1	43 42	70 07	Casco Bay, Luckses' Sound, between Hope and Crotch Islands.	11	do	71	61	47	
127 Bl.	Aug. 2	43 42	70 07	Casco Bay, Luckses' Sound, between Hope and Crotch Islands.	11	do	71	61	47	
128 Bl.	do	43 44	70 01	Casco Bay, Harpswell Sound, SW. end of Bailey's Island, S. by E.; Ram Island, N. by W.	12½	do	69	63½	45	
129 Bl.	do	43 42	70 11	Casco Bay, between Cow Island and Cow Island Ledge.	9	Sandy mud, gravel, shells.	67	62	54½	
130 Bl.	do	43 42	70 11	Bluelight Cove.	2	Muddy.	68	63	57	
131 Bl.	Aug. 3	43 41½	70 10½	do.	2	do	66	61	57	
131 Bl.	Aug. 4	43 41½	70 10½	Casco Bay, Cow Island, W. ¼ mile.	12	Gravelly.	70	65	51	

132 Bl.	do.	43 40	70 05	Casco Bay, between Halfway Rock and Inner Green Island.	12½	Gravel and shells.	73	63	48½
133 Bl.	do.	43 38½	70 04½	Month Casco Bay, Halfway Rock, E. by N. about 3 miles.	19	Sandy and rocky.	62	46½	43
134 Bl.	do.	43 40½	70 03½	Month Casco Bay, Halfway Rock, SSE.; Eagle Island, NE. & N.	18½	Coarse sand, gravel.	74	60	46½
135 Bl.	do.	43 35½	70 04½	Bluelight Cove.	3½	Muddy.	71	68	56
136 Bl.	do.	43 35½	70 04½	do.	3	do.	70	62	58
137 Bl.	Aug. 5	43 35½	70 04½	West Cod Ledge, off Portland, Cape Elizabeth, W. & S.; Halfway Rock Light, NE. & N.	13	Sandy and rocky.	72	64	46
138 Bl.	do.	43 32	69 58	Portland Head Light, NW. & W. 15 miles; Seguin Island, NE. by E. 15 miles ("18 miles off Cape Elizabeth," D. L.).	48-54	Muddy.	65	64	39½
139 Bl.	Aug. 6	43 32	69 58	Bluelight Cove.	3	do.	68	63	57
140 Bl.	do.	43 31	69 59½	Cape Elizabeth, NW. by W. about 14 miles; Seguin Island, NE. by E. about 16 miles.	24	do.	68	62	59
141 Bl.	do.	43 31	69 59½	Cape Elizabeth, NW. 15 miles; Seguin Island Light, NE. by E. & E. 18 miles.	48-54½	do.	69	64	38
142 Bl.	do.	43 28½	69 59	2 miles SE. of 142 Bl.	48	Stones and mud.	72	64	37½
143 Bl.	do.	43 27½	69 57	Bluelight Cove.	64	Muddy.	68½	65	36
144 Bl.	do.	43 27½	69 57	Casco Bay, Chandler's Cove, Great Chebeague Island.	2	do.	64	61	57
145 Bl.	do.	43 27½	69 57	Casco Bay, Broad Sound, between Bates Island and Eagle Island.	2	do.	63	61	58
146 Bl.	Aug. 7	43 43	70 08½	Casco Bay, Broad Sound, between Bates Island and Eagle Island.	7	Mud, dead eel-grass.	70	59	34
147 Bl.	Aug. 11	43 43	70 08½	Casco Bay, Broad Sound, between Bates Island and Eagle Island.	25	Gravelly.	65	57	47½
148 Bl.	do.	43 42	69 38	Casco Bay, Luckies' Sound, between Stepping Stones and Crotch Island.	15	Soft mud.	65	55½	45
149 Bl.	Aug. 12	43 35	70 05	West Cod Ledge, off Portland, Cod Ledge (buoy?) NE. & E. 1 mile.	13	Sandy, with shells.	63	61	47
150 Bl.	do.	43 28½	69 52½	Cape Elizabeth, NW. by W. & W. about 20 miles; Seguin Island, NE. by N. about 15 miles.	68	Muddy.	64	62½	38
151 Bl.	Aug. 13	43 42½	69 47	Seguin Island, E. by S. 1 mile; Jackknife Ledge buoy, N. by E. ¾ mile.	12	Sandy.	64	52	47
152 Bl.	do.	43 42	69 38	Seguin Island, WNW. 5 or 6 miles.	33	Sandy and rocky, some mud.	64	57	41½
153 Bl.	do.	43 42	69 38	Same locality, Cod Stomach.	3	Mud.	60	58	56
154 Bl.	Aug. 14	43 39	70 13	Bluelight Cove.	9	Sand and mud.	62	57	55½
155 Bl.	do.	43 42½	70 10½	Main channel, Portland Harbor.	9	Muddy.	64	55½	54
156 Bl.	Aug. 19	43 42½	70 10½	Casco Bay, between Clapboard and Long Islands.	2	do.	61	58	57
157 Bl.	Aug. 20	43 35½	69 38	Bluelight Cove.	75	do.	62	59	38
158 Bl.	do.	43 40	69 39½	Seguin Island, NNW. 9 miles.	40	Sand and gravel, rocks.	65	58	38½
159 Bl.	Aug. 24	43 40	69 39½	Seguin Island, NW. 5 miles (about same as No. 201 Bl.).	2	Muddy.	63	61	60
160 Bl.	do.	43 40	69 39½	Bluelight Cove.	2	do.	62	58	57
161 Bl.	Aug. 25	43 40	69 39½	do.	2	do.	61	58	56
162 Bl.	Aug. 27	43 40	69 39½	do.	2	do.	60	58	57
163 Bl.	Aug. 29	43 40	69 39½	do.	2	do.	60	58	57
164 Bl.	Aug. 30	43 40	69 39½	do.	2	do.	60½	61	57
165 Bl.	Sept. 1	43 38	70 09	Off Portland, Witch Rock buoy 1 mile west.	11-14	Rocky.	58	54	50½
166 Bl.	Sept. 3	43 47½	69 55	Casco Bay, Quahog Bay, east of south end of Pole Island.	5	Muddy.	63	59½	53
167 Bl.	Sept. 4	43 47½	69 55	Casco Bay, Quahog Bay, east of north end of Pole Island.	6	do.	63	59	54½
168 Bl.	July 11	43 41	70 11	Casco Bay, off Cow Island.	16	Mud.	63	59	54½
169 Bl.	do.	43 40½	70 10½	Casco Bay, middle of Hussey Sound.	17	Rocky.	63	59	54½
170 Bl.	do.	43 40½	70 10½	Casco Bay, off Cow Island.	(?)	Sand and rocks.	63	59	54½
171 Bl.	do.	43 40½	70 10½	Casco Bay, off Hog Island.	(?)	(?)	63	59	54½
172 Bl.	do.	43 40½	70 10½	Casco Bay, off Hog Island.	20	Sand and stones.	63	59	54½

Tan.

DREDGINGS BY THE BLUELIGHT, 1873—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperature.			Apparatus used.
							Air.	Surface.	Bottom.	
172 Bl.	July 11	43 35	70 01	Casco Bay, off Crotch Island.	(?)	(?)	°	°	°	T.
173 Bl.	July 14	43 35	70 01	Casco Bay, off Overset Island.	16	Clean gravel.	°	°	°	T.
174 Bl.	do	43 35	70 01	Casco Bay, off mouth of Bluelight Cove, drifting north.	15-19	Sand and sponge.	°	°	°	T.
175 Bl.	do	43 35	70 01	Casco Bay, off north end of Hog Island.	15	Sand	°	°	°	T.
176 Bl.	do	43 44	70 09½	Casco Bay, between Great Chebeag and Basket Islands.	7-8	Mud	°	°	°	Tan.
176½ Bl.	do	43 44	70 09½	do (?).	(?)	(?)	°	°	°	Tan.
177 Bl.	do	43 44	70 09½	Casco Bay, off North end of Long Island.	(?)	Mud	°	°	°	Tan.
178 Bl.	July 15	43 44	70 09½	Mouth Casco Bay, off Inner Green Island.	22	Rocky	°	°	°	T.
179 Bl.	do	43 44	70 09½	do	17	Sandy	°	°	°	T.
180 Bl.	do	43 40½	70 04	Casco Bay, off Jewell's Island.	(?)	(?)	°	°	°	T.
181 Bl.	July 16	43 40½	70 04	(?)	(?)	Muddy	°	°	°	T.
182 Bl.	do	43 40½	70 04	(?)	15-23	Shelly and Spongy	°	°	°	T.
183 Bl.	do	43 36½	70 02	Off Portland, ENE. of West Cod Ledge.	(?)	do	°	°	°	T.
184 Bl.	July 17	43 36½	70 02	Off Portland, WSW. of West Cod Ledge 1½ miles.	14-20	Hard and rocky	°	°	°	T.
185 Bl.	do	43 36½	70 02	Off Portland, near 185 Bl.	10-15	do	°	°	°	T.
186 Bl.	do	43 34½	70 08	Off Portland, SSW. of West Cod Ledge 3 miles.	10	do	°	°	°	T.
187 Bl.	July 18	43 34½	70 08	Casco Bay, off Cow Island.	20-22	do	°	°	°	T.
188 Bl.	do	43 34½	70 08	do	17	Sandy	°	°	°	T.
189 Bl.	do	43 34½	70 08	do	13½	Sand and stones	°	°	°	T.
190 Bl.	do	43 36½	70 04½	Casco Bay, between Cow Island and Crow Island.	14	do	°	°	°	T.
191 Bl.	July 21	43 36½	70 04½	Off Portland, near West Cod Ledge.	28	Mud and stones.	°	°	°	T.
192 Bl.	do	43 36½	70 04½	Entrance to Portland Harbor, little west of 122 Bl.	10	Rocky and shelly	°	°	°	T.
193 Bl.	July 22	43 36½	70 04½	Casco Bay, off Whaleboat Island.	(?)	(?)	°	°	°	T.
194 Bl.	July 24	43 36½	70 04½	Casco Bay, off Bateman's (Bates?) Island.	13½	Gravel and br. shell	°	°	°	T.
195 Bl.	do	43 36½	70 04½	Casco Bay, between Ministerial and Eagle Islands, the monument on Mark Island showing over north end of Eagle Island.	32	Gravel and stones	°	°	°	T.
196 Bl.	July 31	43 35½	70 01	Off Portland, 1 mile east of East Cod Ledge.	(?)	(?)	°	°	°	T.
197 Bl.	do	43 35½	70 01	Entrance to Portland Harbor, near 192 Bl.	11	Hard	°	°	°	T.
198 Bl.	Aug. 4	43 46	70 05	Casco Bay, Haddock Grounds, Broad Sound.	12-18	Gravel and shells	°	°	°	T.
199 Bl.	do	43 46	70 05	Casco Bay, off Chebeag Point.	11½	Mud	°	°	°	T.
199½ Bl.	do	43 43½	70 10	Casco Bay, between Basket and Little Chebeag Islands.	(?)	(?)	°	°	°	T.
200 Bl.	Aug. 13	43 39½	69 38	Seguin Island, NW. 6 miles (see 152 Bl.)	35	Muddy	°	°	°	T.
201 Bl.	Aug. 20	43 37½	69 51	Seguin Island, NW. 5 miles.	45	Rocky and sandy	°	°	°	T.
202 Bl.	Aug. 25	43 37½	69 51	Off Portland, East Cod Ledge.	(?)	(?)	°	°	°	T.
203 Bl.	Aug. 27	43 37	70 01½	Casco Bay, between Peak's Island and Overset Island.	18	Rock and sponges	°	°	°	T.
204 Bl.	do	43 37	70 01½	Off mouth Casco Bay, 2 miles off Halfway Rock; the locality mentioned on page 357 of Professor Verrill's Explorations of Casco Bay, Proc. Am. Ass. Adv. Sci., 1873.	27½	Sand, gravel, shells, mud.	°	°	°	T.

205 Bl.	Aug. 28	.....	.....	.....	Casco Bay, off Whaleboat Island.	18	Gravel and shells	
206 Bl.	Aug. 29	.....	.....	.....	Off mouth of Casco Bay, west of Halfway Rock	(?)	Muddy, &c.	
207 Bl.	do	.....	.....	.....	Casco Bay, Broad Sound	(?)	Muddy and hard, mixed	
208 Bl.	Aug. 30	.....	.....	.....	Mouth Casco Bay, off Ram Island	18	Sandy, muddy, &c.	
209 Bl.	do	.....	43 39	70 08	Mouth Casco Bay, SW. of Outer Green Island to Long Island.	15	Rocky	
210 Bl.	do	.....	.....	.....	Casco Bay, off Stopping Stones	12	Muddy?	
211 Bl.	do	.....	43 34	70 07½	Off Portland, Cod Ledge Rock	12½	(?)	
212 Bl.	(?)	.....	43 29½	69 30	Cape Elizabeth, WNW. 30 miles	95	Muddy	T.

STATIONS FOR 1874 AND 1875, WITH HEADQUARTERS AT NOANK, CONN., AND WOOD'S HOLL, MASS.

In 1874, the headquarters of the United States Fish Commission were established at Noank, Conn., and the area covered by its dredgings included Fisher's Island Sound; the eastern part of Long Island Sound; Block Island Sound; and Gardiner's and Peconic Bays; and also extended some distance to the east, south, and southwest of Block Island. In 1875, with headquarters at Wood's Holl, Mass., dredgings were carried on in Vineyard and Nantucket Sounds; Buzzard's Bay; over a portion of Nantucket Shoals; to the southward of Nantucket Island and Martha's Vineyard; and also on and about Southwest Shoal. The dredgings were all made by the United States steamer *Bluelight*, Commander L. A. Beardslee, and a separate series of numbers, to designate the stations, was employed for each year. To facilitate the recording of all the dredging stations of the United States Fish Commission on charts, and to bring the southern ones into uniformity with those made to the north of Cape Cod in more recent years, and already recorded both on charts and in reports prepared for publication in a single series of numbers ranging from 1 to 378, 400 has been added to the 1874 dredgings and 600 to those of 1875. In this way all the dredging stations from 1874 to 1879, inclusive, are included in a single series.

The temperature observations recorded in the two following tables were mostly taken with much care. Former experiences had proved that the Miller-Casella thermometers were slow in acting, requiring from three to ten minutes (according to the depth of water) to obtain a correct reading, and they were, therefore, always left down a suitable length of time. The bottom and surface temperatures, in nearly all cases, were taken with Miller-Casella self-registering thermometers; occasionally a United States naval thermometer was employed for surface temperatures, and the same instrument was generally employed for the air.

STATIONS FOR 1874.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
	1874.				o	o	o	
401	July 13	Fisher's Island Sound, West Clump, bearing S.	7½	Mud				D.
402	13	Fisher's Island Sound	9½	Sand				D.
403	13	do	11½	do				D.
404	13	Fisher's Island Sound, off Lattimer's Reef.	3½	Rocky				D.
405		(No record.)						
406	July 14	Fisher's Island Sound, N. of Young's Rock.	11	Rocky				D.
407	14	Fisher's Island Sound, NW. of Seal Rocks.	9	Sand, stones				D.
408	14	Fisher's Island Sound, N. by E. of Wicopessit.	11½	Clay				D.
409	14	Fisher's Island Sound, Lord's Channel.	11½	Rocky				Tan.
410	14	Fisher's Island Sound, off Nap-atree Point.	2½	Sand				T.
411	16	Watch Hill Light-House, R. I., NNW., distant about ½ mile.	11	do				D.

STATIONS FOR 1874—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
	1874.				°	°	°	
412	July 16	Watch Hill Light NNE., distant nearly $\frac{1}{2}$ mile.	5	Rocky				Tan.
413	16	do	5	do				Tan.
414	16	Fisher's Island Sound, off Groton Long Point.	7	Gravel				D.
415	16	Fisher's Island Sound, Groton Long Point NW. by N. $\frac{1}{2}$ mile.	7	do				D.
416	17	Fisher's Island Sound, $\frac{3}{4}$ mile W. by N. of N. Hammock Light-House.	6	Sand, mud				D.
417	17	Long Island Sound, New London Light N. by W., distant about $2\frac{1}{4}$ miles.	8	Sand				D.
418	17	Long Island Sound, New London Light N., distant $1\frac{1}{2}$ miles.	9	Sand, mud				T.
419	17	Long Island Sound, Little Gull Island Light bearing S. by E. 2 miles.	40	Gravel				D.
420	20	Fisher's Island Sound, $\frac{1}{4}$ mile N. of West Clump.	11 $\frac{1}{2}$	do				D.
421	20	Fisher's Island Sound, N. Hammock Light W. by S. $\frac{1}{2}$ mile.	12 $\frac{1}{2}$	Sand, gravel				D.
422	20	Fisher's Island Sound, N. Hammock Light S. by W. $\frac{1}{2}$ W. $\frac{1}{4}$ mile.	13	do				D.
423	20	Fisher's Island Sound, N. Hammock Light E. $\frac{1}{2}$ mile.	17	Gravel				D.
424	20	Fisher's Island Sound, N. Hammock Light E. by N. 1 mile.	7 $\frac{1}{2}$	Sand, mud				D.
425	20	Fisher's Island Sound, N. Hammock Light NE. by E. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles.	10 $\frac{3}{4}$	Mud				D.
426	20	Fisher's Island Sound, near Middle Clump.	8	Sand				T.
427	22	Fisher's Island Sound, $\frac{1}{4}$ mile NW. of Middle Clump.	11 $\frac{1}{2}$ —9 $\frac{1}{2}$	Sand, shells	65	64	62.5	D.
428	22	Fisher's Island Sound, $\frac{1}{4}$ mile NNW. of Middle Clump.	11	do	65	64	62.5	D.
429	22	Fisher's Island Sound, $\frac{1}{8}$ mile NNE. of W. Clump.	8	do	65	64	63	D.
430	23	Fisher's Island Sound, Eelgrass Light-Ship E. by W., distant $\frac{1}{2}$ mile.	7	Sand, gravel	66	64	62.5	D.
431	23	Fisher's Island Sound, between Latimer's Reef and Young's Rock.	10 $\frac{1}{2}$	Sand, gravel, shells	65.5	62.5	61.5	D.
432	23	Fisher's Island Sound, eastward of Latimer's Reef.	11	Coarse sand, shells, rocks.	65	62.5	61	D.
433	24	Fisher's Island Sound, Groton Long Point NE. by N., distant $\frac{1}{2}$ mile.	8	Sand, shells	72	66	63	D.
434	24	Fisher's Island Sound, between Sea-Flower Reef and Groton Long Point.	7	do	71	65.5	62.5	D.
435	24	Long Island Sound, Race Point bearing E., distant $2\frac{1}{2}$ miles.	50	Rocky, with mussels.	72	68	59	D.
436	24	Long Island Sound, about $\frac{1}{4}$ mile SW. of 435.	50	Rocks, gravel	68	68	58	D.
437	24	Block Island Sound, off Culloden Point, Long Island.	12 $\frac{1}{2}$	Sand, mud	74	66	61	T.
438	24	Block Island Sound, NW. of Culloden Point, Long Island.	12	Sand				D.
439	27	Fisher's Island Sound, eastern part of Sweeper Sound.	4	Sand, shells	70.5	66.5	65	D.
440	27	Fisher's Island Sound, house on Ram Island bearing NE. $\frac{1}{2}$ E.	4	Sand	68.5	66.5	65.5	D.
441	27	Fisher's Island Sound, SW. of Ram Island $\frac{1}{4}$ mile.	3 $\frac{1}{2}$	do	68.5	66.5	65	D.
442	27	Fisher's Island Sound, off Middle Clump.	14	Stones, gravel	68.5	66.5	64	D.
443	27	do	10 $\frac{1}{2}$	do	67	66	64.5	D.
444	29	Fisher's Island Sound, NW. of Eel grass Light-Ship, distant about $\frac{1}{2}$ mile	7	Sand, gravel, shells				D.

STATIONS FOR 1874—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
445	1874. July 30	Block Island Sound, SE. $\frac{1}{2}$ E. of Race Rock nearly 3 miles; E. of Little Gull Island Light-House $5\frac{3}{4}$ miles.	45	Sand.....	76	62.5	57	D.
446	30	Block Island Sound, $\frac{7}{8}$ mile about W. by S. of 445.	40	...do.....				D.
447	30	Block Island Sound, $1\frac{1}{8}$ miles about W. by S. of 445.	24	...do.....				D.
448	30	Mouth of Gardiner's Bay, Long Island, Gardiner's Point Light-House S. about $\frac{3}{4}$ mile.	14 $\frac{1}{2}$	Gravel.....	71	66	63.5	D.
449	30	Gardiner's Bay, Long Island....	6 $\frac{1}{2}$	Mud.....	71.5	67.5	64.5	D.
450	30	do.....	4 $\frac{1}{2}$	Sand.....	72	66.5	65	D.
451	30	do.....	3	Gravel.....	72	66.5	65	T.
452	30	do.....	6 $\frac{1}{2}$	Mud.....	69.5	68.5	65	D.
453	31	Block Island Sound, Watch Hill Light N. by W. 3 miles.	18	Sand.....	68	66	56	D.
454	31	Block Island Sound, Watch Hill Light N. by E. 3 miles.	18 $\frac{1}{2}$	Mud, shells.....				T.
455	Aug. 3	Long Island Sound, Bartlett's Reef Light-Ship E. about $1\frac{1}{2}$ miles.	22	Sand, mud.....	60.5	64.5	63.5	D.
456	3	Long Island Sound, Bartlett's Reef Light-Ship E. about $2\frac{1}{2}$ miles.	14	Gravel, sand.....	59	64	63	D.
457	3	Long Island Sound, Bartlett's Reef Light-Ship E. $\frac{1}{2}$ N. about 3 miles.	15 $\frac{1}{2}$	Sand, gravel, shells.....	67	64.5	63.5	D.
458	3	Long Island Sound, Hatchett's Point N.W. about 2 miles.	19	Gravel, shells.....	61.5	64	63	D.
459	3	Long Island Sound, off Saybrook, Conn.	4	Sand.....	67	64.5	63.5	T.
460	3	Long Island Sound, between Cornfield Point and Long Sand Shoal.	9	.....				T.
461	4	Little Peconic Bay, Long Island.	7 $\frac{1}{2}$	Gravel, shells.....	66.5	74	71.5	D.
462	4	do.....	7	Sand, shells.....				D.
463	4	do.....	7	Gravel.....			72	D.
464	4	do.....	13 $\frac{1}{2}$ —10	Sand, gravel.....	67	72	71.5	T.
465	4	do.....	14	Sand, shells.....				D.
466	4	Great Peconic Bay, Long Island.	5 $\frac{1}{2}$	Mud, sand, gravel.....	67.5	74	72	D.
467	4	do.....	5 $\frac{1}{2}$	Sand.....	68	73	72.5	D.
468	4	do.....	4 $\frac{1}{2}$	Gravel.....	66.5	73	72.5	D.
469	4	Little Peconic Bay, Long Island.	9 $\frac{1}{2}$	Sand, shells.....	66	72.5	71	D.
470	4	do.....	4	Sand.....				T.
471	5	Gardiner's Bay, Long Island....	3 $\frac{1}{2}$	do.....		70.5	68	D.
472	5	do.....	4	Sand, shells.....				T.
473	6	Block Island Sound, Watch Hill Light N. $\frac{1}{2}$ W., distant 3 miles.)	18—23	Sand.....	63	63	59 (60)	T.
474	6	Block Island Sound, Montauk Point SW. $\frac{1}{2}$ S. 6 miles.	17	do.....		63.25	60	D.
475	6	Block Island Sound, Block Island Light ENE., distant about 3 miles.	19 $\frac{1}{2}$	Mud.....		63.5	60	D.
476	6	Block Island Sound, Block Island Light SE. by E. $\frac{1}{2}$ E. about 4 miles.	18 $\frac{1}{2}$	Sand, mud.....		64	60	D.
477	6	Block Island Sound, Block Island Light ESE., about 7 miles.	19	Mud.....		64	59	D.
478	6	Block Island Sound, Watch Hill Light N.W. $\frac{1}{2}$ W. about 4 miles.	24	Sand.....	70	64	58.5	D.
479	6	Block Island Sound, Watch Hill Light N.W. $\frac{1}{2}$ N. about 3 miles.	22	Sand, shells.....				T.
480	10	In West Harbor of Fisher's Island.	4	Sand.....	74	66.5	65.25	D.
481	10	do.....	3 $\frac{1}{2}$	do.....	74	66.5	65.25	D.
482	10	In West Harbor of Fisher's Island, off Clay Point.	5 $\frac{1}{2}$	Sand, mud.....	74	66.5		T.
483	10	Off Hawk's Nest Point, inner side of Fisher's Island.	5 $\frac{1}{2}$ —2 $\frac{1}{2}$	Sand, gravel, to mud and weeds.	74			T.
484	10	Fisher's Island Sound, between Middle Clump and Ram Island and Reef.	12 $\frac{1}{2}$	Mud, shells.....	73.5	69	64.75	D.
485	11	Block Island Sound, about 1 mile S. of E. end of Fisher's Island.	15	Sand.....	75	66	61	D.

STATIONS FOR 1874—Continued

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
	1874.				°	°	°	
486	Aug. 11	Block Island Sound, about $\frac{3}{4}$ mile S. of E. end of Fisher's Island.	8 $\frac{1}{2}$	Sand	75	65.5	62.5	D.
487	11	Block Island Sound, about $\frac{1}{2}$ mile off centre of Fisher's Island.	8	Stones	72	65.5	63	D.
488	11	Block Island Sound, off Mount Prospect, Fisher's Island, about $\frac{1}{4}$ mile from land.	7 $\frac{1}{2}$	do	76	66.5	63	D.
489	11	Block Island Sound, about $\frac{1}{2}$ mile westward of 488.	6	Stones, gravel	78	66.5	63.25	D.
490	11	Block Island Sound, about $\frac{3}{4}$ mile SE. of Race Point.	5 $\frac{1}{2}$	do	76.5	66.5	63.25	D.
491	11	Block Island Sound, about $1\frac{1}{4}$ miles S. of Mount Prospect.	32 $\frac{1}{2}$	Sand, shells	75	66.5	58.5	T.
492	12	Noank Harbor	2	Mud				D.
493	12	Fisher's Island Sound, between Sea-Flower and Horse-Shoe Reefs.	4 $\frac{1}{2}$	Sand	76	67.5	62.5	D.
494	12	do	4 $\frac{1}{2}$	Sand, gravel	75	67	64.5	D.
495	12	Fisher's Island Sound, W. of Sea-Flower Reef Beacon.	6	Fine sand and mud		67	64.5	T.
496	12	Fisher's Island Sound, W. of Sea-Flower Reef Beacon about 1 mile.	6	Sand, mud	72	67	64.5	T.
497	13	Block Island Sound, Montauk Point Light SSE. about 6 miles.	15 $\frac{1}{2}$	Sand	74	65	64	D.
498	13	Block Island Sound, Montauk Point Light SSE. about 6 $\frac{1}{2}$ miles.	9	Fine sand and gravel.	71	65	64	D.
499	13	Block Island Sound, Montauk Point Light SSE. about 7 $\frac{1}{2}$ miles.	5 $\frac{1}{2}$	Coarse sand and rocky.	72	65	64	D.
500	13	Block Island Sound, Montauk Point Light S. by E. $\frac{1}{2}$ miles.	19	Fine sand	72	65	63.5	D.
501	13	Block Island Sound, Montauk Point Light S. by W. about 3 miles.	20-8	Sand, shells	72	66	63.5	D.
502	13	Block Island Sound, Montauk Point Light SSW. about 2 $\frac{1}{2}$ miles.	8	Stony	72.5	65	65	D.
503	13	Off Montauk Point, Light-House WSW. about 2 miles.	7 $\frac{1}{2}$	Rocky	72	65	64.5	D.
504	13	Off Montauk Point, Light-House W. about 2 miles.	7 $\frac{1}{2}$	do	72	65	64.5	D.
505	14	Fisher's Island Sound, between Eelgrass Light-Ship and White Rock.	5 $\frac{1}{2}$	Sand, gravel	67	66	64.5	D.
506	14	Fisher's Island Sound, about 1 mile E. by N. from Eelgrass Light-Ship.	6	do	67			D.
507	14	Fisher's Island Sound, Stonington Light NE. $\frac{1}{2}$ E. about 1 mile.	5	Sand	67			T.
508	14	Fisher's Island Sound, Eelgrass Light-Ship WNW. $\frac{1}{4}$ mile.	5 $\frac{1}{2}$	Rocky	67			D.
509	17	Fisher's Island Sound, Eelgrass Light-Ship NW. by W. about $\frac{1}{4}$ mile.	7	Stones	69.5	67	63	D.
510	17	Fisher's Island Sound, Eelgrass Light-Ship WNW. 1 mile.	6 $\frac{1}{2}$ -3 $\frac{1}{2}$	Sand, rocky	69.5	67	63	D.
511	17	Fisher's Island Sound, Eelgrass Light-Ship W. by N. about $1\frac{1}{4}$ miles.	5 $\frac{1}{2}$	Hard, rocky	69			Tan.
512	17	Fisher's Island Sound, Stonington Light ENE. about $1\frac{1}{4}$ miles.	4	Sand	69	66.5	60.5	D.
513	17	Fisher's Island Sound, Eelgrass Light-Ship W. $\frac{1}{2}$ N. about 1 mile.	7	Hard, stones	70	67	63	D.
514	17	Fisher's Island Sound, Eelgrass Light-Ship E. about 1 mile.	7 $\frac{1}{2}$	Sand	70	66.5	63	D.
515	18	Off Block Island, Montauk Point W. about 9 miles.	20	do	71	66	47.5	D.
516	18	Off Block Island, Montauk Point NW. by W. $\frac{1}{2}$ W. about 11 miles.	25	Sand, shells	70	67.5	45.5	D.
517	18	do	23 $\frac{1}{2}$	do	70			D.
518	18	do	23 $\frac{1}{2}$	do	70			D.
519	18	Off Block Island, Old Harbor Point, Block Island N. 5 miles.	11	Sand, stones		67	55	D.

STATIONS FOR 1874—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
	1874.				°	°	°	
520	Aug. 18	Off Block Island; Old Harbor Point, Block Island, N. 5 miles.	11	Sand, stones	70			D.
521	18	Off New Shoreham, Block Island	14	Gravel, stones	70	66	57.5	D.
522	18	do	18	Sand, gravel	70	66.5	52.5	D.
523	19	Off Block Island, New Shoreham N.W. by N. about 6 miles.	14	do	73	66.5	54	D.
524	19	Off Block Island, New Shoreham N.W.	14½	Coarse sand	73	66	50.5	D.
525	19	Off Block Island, SE. side	14½	Gravel	69.5	66.5	53	D.
526	19	SE. from Point Judith, Rhode Island, about 4 miles.	13½	Sand, gravel	75	67.5	54.5	D.
527	19	S. from Point Judith, Rhode Island, about 2½ miles.	9	Stones		69.5	61	D.
528	19	W. from Point Judith, Rhode Island, about 3 miles.	4	Rocks, sand	76	67.5	63	D.
529	19	Off Narragansett Beach, Rhode Island.	8½	Sand, gravel				T.
530	19	do	10½	Stones, gravel				T.
531	21	Block Island Sound, Watch Hill Light N. ½ E., distant 3 miles.	21	Sand	80	67.25	56.5	D.
532	21	Block Island Sound, S.W. ¾ S. of No. 531, distant ¼ mile.	20	do	80	67.25		T.
533	21	Block Island Sound, WSW. of No. 531, distant ¾ mile.	17½	do	79.5	67.25		T.
534	21	Block Island Sound, about S. ¾ E. of east point of Fisher's Island ¾ mile.	9	Gravel	78	66.5	63.5	D.
535	21	Block Island Sound, east end of Fisher's Island N. by E. about 2 miles.	19½	Sand	78	67	57.5	D.
536	24	Fort Pond Bay, east end of Long Island.	7½	Mud	76	73.5	65.5	D.
537	24	Off Fort Pond Bay, east end of Long Island.	6½	Sand, gravel				T.
538	24	Napeague Bay, off Culloden Point, Long Island.	8½	Sand		67.5	65.5	D.
539	24	Napeague Bay, east end of Long Island.	5-8	do				T.
540	24	do	6-7	do				D.
541	24	Block Island Sound, Race Point N. about 1½ mile.	42	Stony	70.5	66		D.
542	25	Off Hay Harbor, west end of Fisher's Island.	4½	Sand	70	65.5	64.5	D.
543	25	Off west end of Fisher's Island, Race Point about S., distant ½ mile.	7½	Mud, sand	70	65.5	64.5	D.
544	25	Off west end of Fisher's Island, Race Point SSE. 1 mile.	8½	Fine sand				T.
545	25	Off west end of Fisher's Island, Race Point about S. ¼ mile.	5½	Rocks				D.
546	25	Fisher's Island Sound, between East Clump and Ram Island buoy.	7½	Hard	74.5	65.5	65	D.
547	25	do	14	do				D.
548	25	Fisher's Island Sound, ESE. from house on Ram Island.	7½	do				D.
549	27	Off Niantic Bay, Connecticut, W. of Two-Tree Island.	5	Sand	70.5	65	64	D.
550	27	Off Niantic Bay, Connecticut, between Black Point and Two-Tree Island.	5½	do				T.
551	27	do	5½	do				D.
552	27	Long Island Sound, off Saybrook	6	do				D.
553	27	Long Island Sound, Saybrook Light NE. 2 miles.	7½	do				T.
554	27	Long Island Sound, Plum Island Light SE. by E. 3 miles.	22	Gravel	73.5	66	65	D.
555	27	do	26	do	73.5	66	65	D.
556	30	Off Cox Ledge, ESE. from Block Island about 20 miles. (The shallowest part of Cox Ledge lies in about 46° 11½' N. Lat. and 71° 02' W. Long.)	20	Rocky				D.
557	30	Off Cox Ledge	21½	Sand, rocks	67	62	51.5	D.
558	30	do	21	do				Tan.
559	30	do	21	do				D.

STATIONS FOR 1874—Concluded.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
560	1874. Aug. 30	About 11 miles SE. by E. from Old Harbor Point, Block Island.	21	Rocky	o	o	o	Tan.
561	30	About 10 miles SE. by E. from Old Harbor Point, Block Island.	34	Mud	70	64	52	D.
562	30	do	34	do	70	64	52	D.
563	31	Block Island Sound, Watch Hill Light N. by W. about 3½ miles.	19	Sand				T.
564	31	Block Island Sound, Watch Hill Light N. by W. ½ W. about 3½ miles.	18	Sand				O. T.
565	31	Block Island Sound, Watch Hill Light NNW. about 3½ miles.	17	do				O. T.
566	31	Block Island Sound, Watch Hill Light NNW. about 3½ miles.	18	do				D.
567	31	do	18	do				D.
568	Sept.	On Cox Ledge	19½	Rocky				D.
569		do	20	Sand				D.
570		do	18½	Rocky				D.
571		do	21	do				D.
572		do	21	do	72.5	62.5	50	D.
573		do	18½	do				D.
574		do	19	do				D.
575		do	18	do				D.
576		do	17	do				D.
577		do	19	do				D.
578	3	About 8 miles SSE. from Block Island.	19	do				D.
579	3	Crab Ledge, about 7 miles SE. of Block Island.	10½	do				D.
580	3	Crab Ledge, about 8 miles SE. of Block Island.	10½	do				D.
580	3	About 7 miles off New Shoreham, Block Island.	8-10	do				D.

(There are no numbers 581-600.)

STATIONS FOR 1875.

601	1875. July 12	Vineyard Sound, Tarpaulin Cove Light W. by S. Job's Neck NE. by E. ½ E.	11½	Sand, gravel	70			D.
602	12	Vineyard Sound, Tarpaulin Cove Light WSW. 1 mile.	11	.....	70			D.
603	12	Vineyard Sound, Tarpaulin Cove Light NW. by W. ¾ mile.	17	.....	70			D.
604	12	Vineyard Sound, Menemsha Bight.	8	.....	70			D.
605	12	do	5-7	.....				D.
606	12	do	5-7	.....				D.
607	14	Vineyard Sound, Lackey's Bay.	6½	Gravel				D.
608	14	Between Martha's Vineyard and No Man's Land, Gay Head Light N. ½ E. 2½ miles.	10	Sand, shells				D.
609	14	North of No Man's Land, Lone Rock S. ½ mile.	6	Rocky				D.
610	14	North of No Man's Land	4	Sand				T.
611	14	do	5	do				D.
612	14	Vineyard Sound, Menemsha Bight.	8	do				T.
613	14	Vineyard Sound, Tarpaulin Cove.	14½	Gravel				D.
614	15	Vineyard Sound, S. and E. of Davis Neck Shoal.	5½	Sand				D.
615	15	Vineyard Sound, S. of Monant Point.	15	Sand, gravel				D.
616	15	Vineyard Sound, off Davis Neck Shoal.	13	Sand				T.
617	15	Vineyard Sound, off East Chop of Holmes' Hole.	13½	Hard				D.
618	15	Vineyard Sound, off Falmouth.	4½	Sand				T.
619	15	do	5	do				T.
620	20	Vineyard Sound, Cuttyhunk Light NW. by N. 2½ miles, Sow and Pigs Light Ship W. by N.	14	Hard				D.

STATIONS FOR 1875—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
621	1875. July 20	Vineyard Sound, Cuttyhunk Light NW. by N. $3\frac{3}{4}$ miles, Sow and Pigs Light-Ship WNW.	19	Hard	°	°	°	D.
622	20	Vineyard Sound, Cuttyhunk Light N. $1\frac{1}{4}$ miles, Sow and Pigs Light-Ship W. by N.	10	.....				D.
623	20	do						D.
624	20	Vineyard Sound, Menemsha Light.						T.
625	21	Nantucket Sound; Oak Bluffs Hotel W. by S., W. end of Squash Meadow E. by N.	5	Sand				D.
626	21	Nantucket Sound, between Oak Bluffs and Squash Meadow.	6	...do				D.
627	21	do	6	...do				T.
628	21	Nantucket Sound, Oak Bluffs NW., Cape Poge SE. by E.	$5\frac{1}{2}$	...do				T.
629	21	Nantucket Sound, about same as 628.	$5\frac{1}{2}$	...do				T.
630	21	do	5	...do				D.
631	26	Nantucket Sound, Cross-Rip Light-Ship E. by S. $\frac{1}{2}$ mile.	$10\frac{1}{2}$	Sand	76	69	68.5	D.
632	26	Nantucket Sound, close to Cross-Rip Light-Ship.	$11\frac{1}{2}$	Sand, gravel, shells.	76	69	69	D.
633	26	Nantucket Sound, Cross-Rip Light-Ship W. by S. $\frac{3}{4}$ mile.	12	Sand, gravel	76	69	69	D.
634	26	Nantucket Sound, Cross-Rip Light-Ship WNW. about 1 mile.	10	...do	76	69	69	D.
635	26	Nantucket Sound, Brant Point Light, Nantucket, S. by E. 4 miles.	$7\frac{1}{2}$	Muddy sand	76	71	69.5	D.
636	26	Nantucket Sound, Brant Point Light SSE. $2\frac{1}{2}$ miles.	8	Mud	76			D.
637	28	Nantucket Shoals, Sankoty Head Light west, distant 10 miles.	16	Sand, shells		59	58	D.
638	28	Nantucket Shoals, about same as 637.	$15\frac{1}{2}$	...do		59	58	T.
639	28	Nantucket Shoals, Sankoty Head Light west about 9 miles.	14	Sand		60	59	D.
640	28	Nantucket Shoals (a little S. of 639?).	11	Sand, shells		60	59	D.
641	Aug. 4	Buzzard's Bay, Woepecket buoy W. by S. $\frac{3}{4}$ mile.	7	...do	75			D.
642	4	Buzzard's Bay	8	Hard		68	67	D.
643	4	do	5	Sand		69	69	D.
644	4	do	5	...do	75	69	69	D.
645	4	Buzzard's Bay, buoy No. 8 off Scraggy Neck NE. $\frac{1}{4}$ mile.	6	Sand, shells				D.
646	4	Buzzard's Bay, off Cataumet Harbor.	6	Sand	75			T.
647	4	do	6	...do	75			T.
648	4	Buzzard's Bay	6	...do	75			D.
649	5	Vineyard Sound, Tarpaulin Cove Light N. 1 mile.	16	Hard	71			D.
650	5	do	18	...do	71	68	67	D.
651	5	Buzzard's Bay, $\frac{3}{4}$ mile N. of Penikese.	16	Sand		65	64	D.
652	5	do	16	...do				D.
653	5	Buzzard's Bay	$8\frac{1}{2}$	Mud	71	68	66	D.
654	5	do	$9\frac{1}{2}$	Soft mud	71			D.
655	5	do	10	Sand, mud				T.
656	5	do	8	Mud	71	68.5	66	D.
657	5	do .....		...do	71			D.
658	10	About $\frac{3}{4}$ mile off Gay Head	9	Gravel		66	64	D.
659	10	do	9	Hard	73	66	64	D.
660	10	do	9	...do	73	66	64	D.
661	10	About $1\frac{1}{2}$ miles off Gay Head	13	Shells		67	65	D.
662	10	Vineyard Sound	10	Sand				T.
663	10	Vineyard Sound, off Tarpaulin Cove.	$14\frac{1}{2}$	Hard		68	66	D.
664	10	do	16	.....		67.5	66.5	D.
665	10	do	$13\frac{1}{2}$	Hard		67.5		D.

STATIONS FOR 1875—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
666	1875. Aug. 11	Off Chappaquiddick, SE. part of Martha's Vineyard.	3	Sand.....	o	o	o	T.
667	11	do.....	5	Sand, stones.....	72	71.5	71	D.
668	11	do.....	6	Sand, gravel.....	72			D.
669	11	Off Skiff Island, at SE. corner of Martha's Vineyard.	7	Mud, shells.....	72			D.
670	11	do.....	29	Sand.....	74	68	66	D.
671	12	Great Point, Nantucket Island W. 5 miles.	7½	do.....	72	56	56	D.
672	12	do.....	8	do.....	72	56	56	D.
673	12	do.....	9	do.....	72			T.
674	12	Sankoty Head, Nantucket Island, W. 1 mile.	6½	Sand, gravel.....	72	67	66	D.
675	12	Sankoty Head, Nantucket Island, WNW. 2 miles.	16	Hard.....	72	66	65	D.
676	12	A little west of 675.....	9	do.....	76			D.
677	12	Sankoty Head, Nantucket, NW. 1 mile.	7½	do.....	77			T.
678	12	Sankoty Head, Nantucket, W. ¼ mile.	4½	Sand, shells.....	78			T.
679	13	Nantucket Sound, off west side Nantucket Island.	5½	do.....	80	76	70	D.
680	13	do.....	7	Mud.....	80		70.5	D.
681	13	do.....	5	Sand.....	80	71.5	71	D.
682	13	Nantucket Sound, Cross-Rip Light-Ship NW. 2½ miles.	10	Shells, sand.....	79			D.
683	13	Nantucket Sound, Cross-Rip Light-Ship E. about 3 miles.	10½	Sand.....	79	71	70.5	D.
684	13	Nantucket Sound, Cross-Rip Light-Ship E., Cape Poge Light SSW. 2½ miles.	10½	do.....		71	71	D.
685	13	Vineyard Sound, off Falmouth..	5	do.....	78			T.
686	17	Buzzard's Bay, off Nye's Neck..	7½	Mud, hard.....		76		T.
687	17	do.....	6	Sandy mud.....				T.
688	17	do.....	5	do.....				D.
689	17	do.....	7	Sand.....				D.
690	17	do.....	8	Sand, mud.....				D.
691	17	Buzzard's Bay, off Wild Harbor, near N. Falmouth.	8	Sand, gravel.....	75			D.
692	17	Buzzard's Bay, off West Falmouth ¼ mile.	7½	Shells, gravel.....	75		72	D.
693	17	Buzzard's Bay, SW. of No. 692 about ½ mile.	7	Mud.....	75	76	73	D.
694	17	Buzzard's Bay, off Hamlin Point.	3½	Hard.....	75			D.
695	17	do.....	5	do.....	75	75.5	70.5	D.
696	17	Buzzard's Bay, off Quamquisset Harbor.	7	Sand, mud.....	75	78.5	70.5	D.
697	23	Vineyard Sound, S. entrance to Quick's Hole.	7½	Stony, mussels.....		67	67	D.
698	23	do.....	6	Sand, rocks.....	64	68.5	68.5	D.
699	23	Vineyard Sound, off Quick's Hole	7½	do.....	64			D.
700	23	Vineyard Sound, south of Cuttyhunk Light 1 mile.	9½	Sand.....		66	65.5	D.
701	23	Vineyard Sound, off Cuttyhunk Light 1 mile.	9	Rocky.....	64			D.
702	23	Near mouth of Buzzard's Bay, Cuttyhunk Light ESE. 1 mile.	8½	Gravel.....		66	65	D.
703	23	Vineyard Sound, off south side of Cuttyhunk Island.	9					T.
704	23	do.....	9					T.
705	23	Vineyard Sound, off Robinson's Hole.	15	Sand, gravel.....	66	68.5	66	D.
706	25	Vineyard Sound, off Falmouth..	4		69			T.
707	25	do.....	4					T.
708	25	do.....	6	Sand.....	68.5	73	72	D.
709	25	do.....	5					D.
710	31	Vineyard Sound.....	9	Hard.....	76	69	69	D.
711	31	do.....	10	do.....	76	68.5	69	D.
712	31	do.....	13	do.....	76	69	69	D.
713	31	do.....	8	Shells, gravel.....	76	70	69.5	D.
714	31	do.....	6	do.....	76	70	69.5	D.
715	31	do.....	13	Hard, gravel.....	75	70	70	D.
716	Sept. 1	Off Gay Head, 3 miles SW. buoy No. 25.	17	Mud.....		66	61.5	D.
717	1	Southwest of Gay Head, distant 4 miles.	19	do.....		66	60	D.

STATIONS FOR 1875—Continued.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
718	1875. Sept. 1	Southwest of Gay Head, distant 6½ miles.	19	Mud, sand	°	65.5	60	D.
719	1	Southwest of Gay Head, distant 8 miles.	19	Hard, sand	°	60	58.5	D.
720	1	Southwest of Gay Head, distant 8½ miles.	19	Sand	°			T.
721	1	Southwest of Gay Head, distant 10 miles.	12	Hard	°			D.
722	1	Southwest of Gay Head, distant 11 miles.	14	do	°			D.
723	1	Off NW. end of Devil's Bridge Reef, Gay Head.	9	Rocky	°			D.
724	1	do	9	do	°			D.
725	3	South of Cape Poge, Martha's Vineyard, in north part of Muskeget Channel.	4-13	Sand	°			T.
726	3	About the same as 725	5	Sand, celgrass	°			D.
727	3	do	4	do	°			D.
728	3	do	1-4	do	°			D.
729	3	About 3½ miles SE. of Cape Poge.	7½	Hard	°			T.
730	3	About 4 miles SSE. of Cape Poge.	9	Sand, gravel	°			B.
731	3	About ¾ mile S. of No. 730.	9	do	°			D.
732		(No record.)						
733	6	Off Martha's Vineyard	6	Hard			62	D.
734		(No record.)						
735	6	Off Martha's Vineyard, 1½ miles SE. of Squipnocket Point.	11	Sand			60	D.
736		(No record.)						
737		do						
738	7	Off Nantucket, ½ mile S. of Tuckernuck Island.	3½	Sand			65	D.
739	7	Off Nantucket, off S. side of Tuckernuck Island.	8	Coarse sand			65	D.
740	7	do	8½	Sand				T.
741	7	do	11	do				D.
742		(No record.)						
743	8	2 miles S. of Great Round Shoal buoy, 6½ miles a little NE. of Great Point, Nantucket.	15½	Fine sand	65	60	58.5	D.
744	8	3 miles SE. of Great Round Shoal buoy, 9 miles from Great Point.	18	Sand, shells	65		58.5	D.
745	8	4 miles SSE. of Great Round Shoal buoy, 9 miles from Great Point.	15½	Sand			59	D.
746	8	Off Nantucket, N. of McBlair's Shoal.	13	do				T.
747	8	do	13½	do				T.
748	8	do	13½	do				T.
749	8	do	13½	do				D.
750	15	8 miles east of Great Point, Nantucket.	15	Sand				D.
751	15	9 miles east of Great Point, Nantucket.	13	do				
752	15	8 miles east of Great Point, Nantucket.	20	do				
753	15	9 miles east of Great Point, Nantucket.	10	do				
754	15	11 miles east of Great Point, Nantucket.	10	do				
755	15	12 miles east of Great Point, Nantucket.	10	do				
756	15	15 miles east of Great Point, Nantucket.	9	do				
757	15	15 miles east of Great Point, Nantucket.	9	do				
758	15	16½ miles east of Great Point, Nantucket.	6	do				
759	15	7½ miles east of Great Point, Nantucket.	9	do				
760	15	7 miles east of Great Point, Nantucket.	15	do				
761	15	7½ miles east of Great Point, Nantucket.	10	do				
762	20	Off Southwest Ledge, Gay Head NE. 11½ miles.	16½	Gravel	64		60	D.

STATIONS FOR 1875—Concluded.

Serial number.	Date.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus.
					Air.	Surface.	Bottom.	
763	1875. Sept. 20	Off Southwest Ledge, $\frac{1}{2}$ mile W. of 762.	17	Gravel, sand	64	60	60	D.
764	20	Off Southwest Ledge, $\frac{1}{2}$ mile S. of 762.	-----	-----	-----	-----	-----	-----
765	20	Off Southwest Ledge, $\frac{3}{4}$ mile W. of 763.	17	Sand, gravel	-----	-----	60	D.
766	20	On Southwest Ledge, $\frac{1}{4}$ mile NW. of 765.	17	do	-----	-----	60	D.
767	20	Off Southwest Ledge, $1\frac{1}{4}$ miles W. of No. 762.	18	Sand	64	-----	61	D.
768	20	9 miles SW. of Gay Head	20	do	64	-----	61	D.
769	20	6 miles SW. $\frac{1}{4}$ W. of Gay Head.	20	do	-----	-----	-----	D.

STATIONS FOR 1877, 1878, AND 1879, WITH HEADQUARTERS AT SALEM, MASS., HALIFAX, N. S., GLOUCESTER AND PROVINCETOWN, MASS.

During these three years the dredgings were carried on from the U. S. Str. Speedwell, commanded in 1877 by Lieut. Commander A. G. Kellogg, in 1878 by Lieut. Commander L. A. Beardslee, and in 1879 by Lieut. Z. L. Tanner. In 1877, headquarters were first established at Salem, and the stations made from there covered the northern part of Massachusetts Bay, and portions of the Gulf of Maine, off Cape Ann. During the session of the commission of arbitration on the fishery claims, however, the headquarters were removed to Halifax, N. S., and dredgings were made in the waters off that coast, from the last of August to the first of October. The Speedwell also made a line of stations on her trip across the Gulf of Maine, from Cape Ann to Cape Sable, N. S. In 1878, with headquarters at Gloucester, Mass., the area dredged over included the northern and central parts of Massachusetts Bay, and the Gulf of Maine, off Cape Ann. In 1879, the dredging grounds were the southern part of Massachusetts Bay, and the Gulf of Maine, off Cape Cod. The bottom temperatures in 1877 were mostly taken with Miller-Casella self-registering, deep-sea thermometers, but in 1878 and 1879 Negretti-Zambra thermometers were used for that purpose. All the temperatures for 1879 were taken with more than usual care, the thermometers employed being frequently compared with a reliable standard.

DREDGINGS BY SPEEDWELL, 1877.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
							Air.	Surface.	Bottom.	
1	1877. Aug. 4	42 30	70 45	A little S. of E. from Salem, 4 miles SSE. of Baker's Island.	22	Gravelly	71	{ 63 } { 65 }	o	D.
2	do			Same as No. 1	22	do				T.
3, 4	do			NW. of No. 1	22	do	72	{ 60 } { 62 }	{ 45 } { 45 }	D.
5	do	42 28	70 42	Baker's Island NW. by N. 5½ miles, Eastern Point (south of Gloucester) NNE. 6½ miles.	33	Sand and mud	72		45	D.
6	do			SW. of No. 5		do				T.
7	do			do		do				T.
8	Aug. 6			Halfway Rock NW. by W. ½, Baker's Island NW. by N. ½ N. (true), close to No. 1.	20	Rocky	70	65½	55	D.
9	do			S. of No. 8	25	Gravelly	69	63½	52½	Tan.
10	do			Same as No. 8	29½	do	69½	64½	50½	D. and Tan.
11	do	42 26	70 37	Thatcher's Island Lights NE. by E. ½ E. 12¼ miles, Baker's Island Light NW. ½ N. 10 miles.	45	Mud	70	64½	48½	D.
12	do			Same as No. 11						D.
13	do			1 mile E. of No. 12	50					T.
14	do			do						T.
15	Aug. 7			Baker's Island NNW. 4 W. 3 miles, Halfway Rock NW. by W. 1¼ miles, near Nos. 1 to 4, and 8 to 10.	19½	Gravelly	69	66	54½	D.
16	do			Same as No. 15						Tan.
17	Aug. 8			Halfway Rock NW. by W. 3 miles, Baker's Island Light, NW. by N. 44 miles; between No. 5 and No. 1.	32					T.
18	do	42 29	70 38	Halfway Rock W. by N. ½ N. 6½ miles, Eastern Point Light N. ¾ W. 5½ miles.	45	Mud				T.
19	do			About same place						T.
20	do			do	45	do				T.
21, 22	Aug. 10			Halfway Rock W. by N. ¾ N. 1¼ miles, Baker's Island NW. ¾ N. 3 miles, near No. 1.	45	do				T.
23	do			Halfway Rock W. by N. ¾ N. 6 miles, Eastern Point Light N. 4 E. 5½ miles, near Nos. 18 to 20.	26	Hard gravel and stones				D.
24	Aug. 13	42 30	70 41	Halfway Rock W. by N. ¾ N. 4½ miles, Eastern Point Light N. by E. 4 E. 7 miles.	35	Mud and clay nodules				T.
25	do	42 27½	70 36	Halfway Rock NW. by W. ¾ W. 8½ miles, Eastern Point N. by W. ¾ W. 8 miles.	33	Soft mud	70	67½	40½	D.
26-30	do			Same as No. 25	48	do	69	67½	40½	D.
31	do			do	48	do				T.
32	Aug. 14	42 30	70 20	{ Thatcher's Island Light NW. ¾ N. 12¼ miles, Halfway Rock W. by N. 50 miles.	48-50	Mud				T.
					90	do	78	68	{ 58 } { 59 }	{ T. D. }

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth, in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
							Air.	Surface.	Bottom.	
73	1877.						°	°	°	T.
74	Sept. 4			Sandwich Point (Halifax Harbor) W. $\frac{1}{2}$ N. $\frac{1}{2}$ mile		Fine sand and rocks				D.
75	do			do.		Fine sand.				D.
76	do			Halifax Harbor, half way between Litchfield and Mars Rocks.	18					D.
77	do			$\frac{1}{2}$ mile to the eastward of No. 76	16	Rocky				D.
78	Sept. 5			{ Chebucto Head (entrance of Halifax Harbor) SW. by S. $\frac{1}{2}$ S. (SW. $\frac{1}{2}$ S.), $\frac{1}{2}$ - $\frac{1}{2}$ miles.	25	Rocks and nullipore	67	55 $\frac{1}{2}$	{ 33 37 $\frac{1}{2}$	{ D. D.
79	do			Farther S. and E. than No. 78		Fine sand.				D.
80	do	44 22	63 28	Chebucto Light N. $\frac{1}{2}$ E. 9 miles	57	Muddy and pebbles	69	56 $\frac{1}{2}$	{ 32 $\frac{1}{2}$ 33 $\frac{1}{2}$	{ D. T.
81	do			do.	57	Stony, with sponges and red algæ.				Tan.
82	do			do.	57	Mud and sand				D.
83	do			do.	57	Coarse gravel and stones, bryozoa.				
84	Sept. 6	44 04	63 27	Chebucto Head N. by E. $\frac{1}{2}$ E. 26 miles	101	Fine sand.	65	63	{ 30 38 $\frac{1}{2}$	{ D. T.
85	do			do.						{ D. T.
86	do			do.						{ D. D.
87	Sept. 11			Mouth Halifax Harbor, Litchfield Rock NE. by E. $\frac{1}{2}$ E. $\frac{1}{2}$ miles, Automatic Buoy SE. $\frac{1}{2}$ S. 24 miles, dragging E. to 7 or 8 fathoms on Neverfail Shoal.	21	Very fine sand, stones, and algæ.	72	61 $\frac{1}{2}$	{ 46 $\frac{1}{2}$ 49 $\frac{1}{2}$	{ D. D.
88	do			Sandwich Point S. $\frac{1}{2}$ mile, drifting S. with tide parallel to shore until Sandwich Point was W. by N.	17	Kelp, red algæ, and fine sand.	74	62		T.
89	do			Same as last	21					
90	do			Head of Northwest Arm, Halifax Harbor	6 $\frac{1}{2}$	Mud and eelgrass	74	62	49	D.
91	do			Same as last						
92	do			Halifax Harbor, Mouth of Northwest Arm, battery NE. by E. $\frac{1}{2}$ E., quarry opposite.	7		70	62	58	D.
93	Sept. 13			Halifax Harbor, $\frac{1}{2}$ mile from shore off York Redoubt and Sandwich Point.	16	Sand and red algæ				T.
94	do			Little farther E. and S. than last.						T.
95	do			Same as last.		Very fine sand, ooze and red algæ.				D.
96	do			do.						T.
97	do			Midway between York Redoubt and McNab's Island Light, Halifax Harbor.						D.

98	Sept. 15					18	Mad and fine sand	61	61	{ 46 46½ }	{ T. D. }
99	do									{ 34 34½ }	{ D. D. }
100	do	44	28	63	18	42	Shingle	65	61½		
101	do					42	Fine sand with Ophioglypha.				
102	do					42	Rocks and sand				T.
103	Sept. 20	44	02	63	20	42	Gravelly and rocky	64	63	{ 35½ 36½ }	{ D. D. }
104	do	44	01	63	20	110	Fine sand and mud			{ 35½ 36 }	{ D. D. }
105	do						do				T.
106-108	do										D. and T.
109	Sept. 21					37		57	57½	34	D.
110, 111	do					52	Fine sand and mud	64	60	35	T.
112	Sept. 24					52	do			35	D.
113	do					52	do				T.
114-117	do					53	Sand, mud, to rocks				T.
118	do										T.
119	Sept. 27					16					T.
120	do					43					T.
121	do					69		72	58	36	T.
122	do										D.
123	do					51	Mud, gravel, and rocks	50	52	45	D.
124	Oct. 17	42	32	70	22½	75		52			D.
125	do					75	Mud				D.
126	do										T.
127	do										T.
128	do	42	31½	70	37	36	Mud and fine sand		55	43½	D.

DREDGINGS BY SPEEDWELL, 1878.

129	1878. July 23	42	24	70	33½	49		65	60½	38	T.
130	do					49	Mud	68	63		T.
131	do					45		68	62	38	T.
132	do					45	Mud	70	63	38	T.
132 ^a	do	42	28½	70	36	40	do				
133	do	42	22	70	38½	33	Rocky	67	61		D.

DREDGINGS BY SPEEDWELL, 1878—Continued

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
							Air.	Surface.	Bottom.	
134	1878. July 23	° ' "	° ' "	Thatcher's Island NE. $\frac{1}{2}$ N. 63 miles, Eastern Point N. $\frac{1}{2}$ E. 24 miles, Baker's Island W. $\frac{1}{2}$ N. 53 miles, 1 mile NW. of No. 133	26	Pebbles and coarse sand	°	°	°	D.
135	July 26	42 33 $\frac{1}{2}$	70 38 $\frac{1}{2}$	Eastern Point N. by W. $\frac{1}{2}$ W. 2 miles, West Light Thatcher's Island NE. $\frac{1}{2}$ N. 53 miles, 2 miles N. of No. 133.	25	Stony and gravelly.	70	58 $\frac{1}{2}$	40 $\frac{1}{2}$	D.
135 ^a	do	.....	.....	About same as No. 135.	25	.....	72	.....	40	D.
136	do	.....	.....	Short distance E. of No. 135 (southwesterly on original chart)	26	Sand and stones	70	65	38 $\frac{1}{2}$	D. and T.
137	July 29	42 32 $\frac{1}{2}$	70 23 $\frac{1}{2}$	Eastern Point WNW. $\frac{1}{2}$ W. 16 $\frac{1}{2}$ miles, Thatcher's Island NW. $\frac{1}{2}$ W. 13 $\frac{1}{2}$ miles.	50	Rock, drifting into soft mud.	70	65	38 $\frac{1}{2}$	D.
138	do	42 33	70 26	Thatcher's Island NW. $\frac{1}{2}$ N. 9 miles, Baker's Island W. by N. 16 $\frac{1}{2}$ miles.	50	Muddy.	.....	.....	.....	T.
139	do	.....	.....	Drifting SW. from No. 138	59	do	67	59 $\frac{1}{2}$	40	T.
140	do	42 34	70 32	Eastern Point W. by N. $\frac{1}{2}$ N. 6 miles, Thatcher's Island N. by W. $\frac{1}{2}$ W. 4 $\frac{1}{2}$ miles.	38	do	67	59 $\frac{1}{2}$	40	D.
141	Aug. 1	.....	.....	Gloucester Harbor, Eastern Point Light ESE., Norman's Woe Rock SW. by S., Fresh Water Cove NW. by W. $\frac{1}{2}$ W	8 $\frac{1}{2}$	Sandy	63	57 $\frac{1}{2}$	44 $\frac{1}{2}$	D.
142	do	.....	.....	About as last.	9	.....	.....	.....	50	T.
143	do	.....	.....	do	.....	.....	.....	.....	.....	T.
144	do	.....	.....	do	.....	.....	.....	.....	.....	T.
145	do	.....	.....	do	.....	.....	.....	.....	.....	D.
146	Aug. 1	.....	.....	Gloucester Harbor, between Round Rock and Ten Pound Island Ledge.	8	Sandy	63 $\frac{1}{2}$	56 $\frac{1}{2}$	51	D.
147	Aug. 3	42 33	70 41 $\frac{1}{2}$	About same as No. 145	16	Gravel, stones, broken shells.	67 $\frac{1}{2}$	56 $\frac{1}{2}$	42 $\frac{1}{2}$	T.
148	do	.....	.....	Eastern Point Light NE. by E. $\frac{1}{2}$ N. 2 $\frac{1}{2}$ miles, Baker's Island W. 4 $\frac{1}{2}$ miles.	16	Stony	66	61 $\frac{1}{2}$	42	D.
149	do	.....	.....	$\frac{1}{2}$ mile S. by W. from No. 147	19 $\frac{1}{2}$	Sand and gravel	66	61 $\frac{1}{2}$	42	D.
150	do	.....	.....	About 2 miles SSW. of No. 148, Eastern Point NW. $\frac{1}{2}$ N. 4 $\frac{1}{2}$ miles, Baker's Island WNW. $\frac{1}{2}$ N. 3 $\frac{1}{2}$ miles.	7 $\frac{1}{2}$	Sand and mud	70	61	51 $\frac{1}{2}$	T.
151	do	.....	.....	Gloucester Harbor, half a mile S. of Fresh Water Cove, between it and Eastern Point Light.	7-10	do	.....	.....	.....	T.
152	do	.....	.....	About the same ground	.....	.....	.....	.....	.....	T.
153	do	.....	.....	About the same ground, just off Fresh Water Cove.	.....	.....	.....	.....	.....	T.
154	Aug. 8	.....	.....	do	.....	.....	.....	.....	.....	T.
154	Aug. 15	42 35	70 31	Eastern Point Light, SW. 2 miles, (on schr. Hattie) Thatcher's Island NW. $\frac{1}{2}$ N. 4 $\frac{1}{2}$ miles, Eastern Point W. $\frac{1}{2}$ N. 7 miles.	17	Pebbles, coarse sand	62	62	44 $\frac{1}{2}$	T.
155	do	42 35	70 30	$\frac{1}{2}$ mile ESE. of No. 154, Thatcher's Island NW. $\frac{1}{2}$ W. 5 miles, Eastern Point W. $\frac{1}{2}$ N. 8 miles.	38	Pebbles, coarse sand	69 $\frac{1}{2}$	64 $\frac{1}{2}$	41 $\frac{1}{2}$	D.
156	do	.....	.....	A little E. of No. 155	45	Muddy	.....	.....	.....	D.
157	do	.....	.....	$\frac{1}{2}$ mile W. of last place	42	Sand and mud	70 $\frac{1}{2}$	68 $\frac{1}{2}$	41 $\frac{1}{2}$	T.
158	do	.....	.....	$\frac{1}{2}$ mile W. of last place.	38	Mud and then rocks	73	64 $\frac{1}{2}$	42 $\frac{1}{2}$	D.

No.	Date	Locality	Depth	Bottom	Specimen	Remarks	Depth	Bottom	Specimen	Remarks
159	Aug. 19	Gloucester Harbor, just off Fresh Water Cove	70	40	64	44	40	64	44	40
160	Aug. 19	Eastern Point Light W. $\frac{1}{2}$ N. 6 miles, Thatcher's Island Light, N.W. $\frac{1}{2}$ W. 5 $\frac{1}{2}$ miles.	70	40	64	44	40	64	44	40
161	do	A little S. by W. of No. 160.	60	Mud	64	39	39	64	39	39
162	do	About a mile S. of No. 160.	73	Fine sand	70	65	65	70	65	65
163	do	West Light, on Thatcher's Island N.W. $\frac{1}{2}$ W. 6 miles, Eastern Point Light W. $\frac{1}{2}$ N. 10 miles, a mile SE. $\frac{1}{2}$ E. from No. 160.	75	do	75	40	40	75	40	40
164	do	ern Point Light Thatcher's Island WNW. $\frac{1}{2}$ N. 7 $\frac{1}{2}$ miles, Eastern Point Light W. $\frac{1}{2}$ N. 10 $\frac{1}{2}$ miles, nearly 2 miles E. of No. 160.	35	do	71	64	41	64	41	41
165	Aug. 19	Ipswich Bay, Straitsmouth Light S. by E. 5 miles, Annisquam Light SW. $\frac{1}{2}$ W. 5 $\frac{1}{2}$ miles.	71	do	71	64	41	64	41	41
166	do	About same as last.	71	do	71	64	41	64	41	41
167	do	About same as last.	71	do	71	64	41	64	41	41
168	do	About same as last.	71	do	71	64	41	64	41	41
169	do	Straitsmouth Light SE. by S. 4 $\frac{1}{2}$ miles, Annisquam Light SSW. $\frac{1}{2}$ W. 3 $\frac{1}{2}$ miles, 2 miles WSW. of No. 165.	21	Sand	71	64	41	64	41	41
170	Aug. 24	About $\frac{1}{2}$ mile W. of No. 168.	19	do	71	64	41	64	41	41
171	do	Eastern Point Light W. by N. $\frac{1}{2}$ N. 30 $\frac{1}{2}$ miles, Boone Island Light N. by W. $\frac{1}{2}$ W. 4 $\frac{1}{2}$ miles.	90	Fine sandy mud with some gravel.	71	64	41	64	41	41
172	do	A little S. of last.	90	Similar, but more stony.	67	65	39	65	39	39
173	do	Eastern Point Light W. by N. $\frac{1}{2}$ N. 32 $\frac{1}{2}$ miles, Boone Island Light NNW. $\frac{1}{2}$ N. 42 $\frac{1}{2}$ miles.	115	Sandy mud and fine gravel	67	65	39	65	39	39
174	Aug. 27	Thatcher's Island Light (Western) W. $\frac{1}{2}$ N. 38 miles, Eastern Point Light W. $\frac{1}{2}$ N. 42 miles.	140	Muddy	68	65	39	65	39	39
175	do	About as last.	140	do	66	66	38	66	38	38
176	do	2 miles N. of last place.	175	Mud	66	66	38	66	38	38
177	do	About as last.	175	do	66	66	38	66	38	38
178	do	do	175	do	66	66	38	66	38	38
179	Aug. 29	Gloucester Harbor, just off Fresh Water Cove	7	Fine sand	68	38	38	68	38	38
180	do	About same as last.	10	do	67	39	47	67	39	47
181	do	Eastern Point Light N. $\frac{1}{2}$ W. 7 (11 $\frac{1}{2}$) miles, Thatcher's Island Light N. by E. $\frac{1}{2}$ E. 14 $\frac{1}{2}$ miles.	45	Mud	73	64	41	73	64	41
182	do	About a mile E. of No. 181.	45	do	73	64	41	73	64	41
183	do	Eastern Point Light N. $\frac{1}{2}$ W. 4 $\frac{1}{2}$ miles, Baker's Island Light SW. by S. $\frac{1}{2}$ S. 7 miles.	45	Mud, gravel, and pebbles.	73	64	41	73	64	41
184	do	A little to NE. of No. 183.	45	do	73	64	41	73	64	41
185	Aug. 31	Eastern Point Light W. by N. 33 miles, Boone Island Light NNW. 42 $\frac{1}{2}$ miles, White Island Light NW. $\frac{1}{2}$ N. 42 miles.	110	Mud	75	65	42	75	65	42
186	do	About same as No. 185.	110	Muddy	68	64	39	68	64	39
187	do	About same as last.	110	do	73	64	41	73	64	41
188	do	About 2 miles W. of No. 187.	110	Soft brown mud	68	64	41	68	64	41
189	do	About same as No. 188.	85	Sandy mud and gravel	68	64	41	68	64	41
190	do	About same as last, drifting towards SE.	85	Gravel and pebbles	68	64	41	68	64	41
191	do	About same as last, drifting towards E.	100	Muddy	100	110	110	100	110	110
192	do	Somewhat E. of last.	100-110	Soft brown mud	100-110	110	110	100-110	110	110
193	do	Somewhat SSW. of last.	100-110	Mud, harder at end.	100-110	110	110	100-110	110	110
194	do	Somewhat E. of last	110	Muddy, harder than last.	110	110	110	110	110	110

* Estimated.

DREDGINGS BY SPEEDWELL, 1878—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
							Air.	Surface.	Bottom.	
195	1878 Sept. 2	42 27	70 19	{ Eastern Point Light NW. $\frac{1}{2}$ W. 103 miles, Eastern Light } Thatcher's Island NW. by N. 15 $\frac{1}{2}$ miles.	33-29	Coarse sand.	72 $\frac{1}{2}$	63 $\frac{1}{2}$	{ 45 $\frac{1}{2}$ 48 $\frac{1}{2}$ 47 $\frac{1}{2}$ }	{ D. T. T. }
196	do	42 27	70 19	$\frac{1}{2}$ mile SSW. from No. 195.	29	Stony, sponges and gravel.	72 $\frac{1}{2}$	63 $\frac{1}{2}$	48 $\frac{1}{2}$	T.
197	do	42 25 $\frac{1}{2}$	70 23	Eastern Point Light NW. $\frac{1}{2}$ N. 15 miles, Eastern Light Thatcher's Island NNW. 143 miles, 3 $\frac{1}{2}$ miles W. from No. 195.	23	Stony and spongy.	72 $\frac{1}{2}$	63 $\frac{1}{2}$	54 $\frac{1}{2}$	T.
198	do	42 31	70 20	Eastern Light Thatcher's Island NW. $\frac{1}{2}$ N. 123 miles.	50	Coarse sand and mud.	72 $\frac{1}{2}$	64 $\frac{1}{2}$	30 $\frac{1}{2}$	T.
199	do	42 31	70 20	$\frac{1}{2}$ mile S. No. 198, Eastern Light Thatcher's Island NW. $\frac{1}{2}$ N. 13 $\frac{1}{2}$ miles.	98	Muddy.	71 $\frac{1}{2}$	64 $\frac{1}{2}$	30 $\frac{1}{2}$	T.
200	Sept. 9			Gloucester Harbor, off Norman's Woe.	10	Sandy and rocky.	64 $\frac{1}{2}$	60	50 $\frac{1}{2}$	T.
201	do			Gloucester Harbor, off Mussel Cove.	8 $\frac{1}{2}$	Sandy mud.	63 $\frac{1}{2}$	61	54	T.
202	do			Gloucester Harbor, off Norman's Woe.	8-10	Abundant red algae.	63 $\frac{1}{2}$	61	54	T.
203	Sept. 16	42 31	70 37	Off Gloucester, Eastern Point Light N. by W. $\frac{1}{2}$ W. 43 miles, Baker's Island Light WNW. 8 miles, drifting to SW.	42	Muddy with large stones.	62 $\frac{1}{2}$	60 $\frac{1}{2}$	47 $\frac{1}{2}$	D.
204	do			$\frac{1}{2}$ mile SW. by W. from No. 203.	40	Soft brown mud.	63	60 $\frac{1}{2}$	48 $\frac{1}{2}$	D.
205	do			$\frac{1}{2}$ mile SW. by W. from No. 203.	42	do.	63	60 $\frac{1}{2}$	48 $\frac{1}{2}$	T.
206	do			$\frac{1}{2}$ mile NE. by E. from No. 203.	42	Muddy.	65	60	48 $\frac{1}{2}$	T.
207	do			Same as No. 203.	42	Soft brown mud.	65	60	48 $\frac{1}{2}$	T.
208	do	42 33	70 43	Off Gloucester, Baker's Island Light W. $\frac{1}{2}$ S. 3 $\frac{1}{2}$ miles. Eastern Point Light ENE. $\frac{1}{2}$ N. 2 $\frac{1}{2}$ miles, Kettle Island N. by W. $\frac{1}{2}$ miles.	19-23	Rocky.	63 $\frac{1}{2}$	60	48 $\frac{1}{2}$	D.
209	do			$\frac{1}{2}$ mile N. by W. $\frac{1}{2}$ W. from No. 208, $\frac{1}{2}$ mile from Kettle Island.	17	Rock, gravel, and mud.	64	60 $\frac{1}{2}$	48 $\frac{1}{2}$	D.
210	Sept. 17	42 38	70 28 $\frac{1}{2}$	Off Cape Ann, Salvages NW. 5 miles, Eastern Point W. $\frac{1}{2}$ S. 9 miles.	60	Soft dark-brown mud.	66	60	43	D.
211	do			About a mile E. of No. 210.	60	do.	65 $\frac{1}{2}$	60 $\frac{1}{2}$	42 $\frac{1}{2}$	D.
212	do			About $\frac{1}{2}$ mile S. by E. $\frac{1}{2}$ E. of No. 210.	68	do.	65 $\frac{1}{2}$	60 $\frac{1}{2}$	42 $\frac{1}{2}$	T.
213	do			About $\frac{1}{2}$ mile E. by S. $\frac{1}{2}$ S. of No. 212.	68	Soft dark-brown mud and hard concretions.	65 $\frac{1}{2}$	60 $\frac{1}{2}$	42 $\frac{1}{2}$	T.
214	do			A little SW. of No. 213.	57	Fine mud and sand.	65 $\frac{1}{2}$	62	50 $\frac{1}{2}$	T.
215	Sept. 18	42 31	70 32	Eastern Point Light NW. $\frac{1}{2}$ N. 74 miles, Thatcher's Island Light N. $\frac{1}{2}$ W. 7 $\frac{1}{2}$ miles.	35	Fine sand and few small pebbles.	65 $\frac{1}{2}$	62	50 $\frac{1}{2}$	T.
216	do			$\frac{1}{2}$ mile NNE. $\frac{1}{2}$ E. from No. 215.	45	Sandy.	65 $\frac{1}{2}$	62	50 $\frac{1}{2}$	T.
217	do	42 30	70 35	Eastern Point Light NNW. $\frac{1}{2}$ W. 53 miles, Thatcher's Island Light N. by E. $\frac{1}{2}$ E. 7 $\frac{1}{2}$ miles, 2 $\frac{1}{2}$ miles westerly from No. 215.	35	Soft dark-brown mud.	65 $\frac{1}{2}$	62	50 $\frac{1}{2}$	T.
218	do			Same as No. 217.	45	do.	65 $\frac{1}{2}$	62	50 $\frac{1}{2}$	T.

219	do	42	30	70	33	Eastern Point Light NW $\frac{1}{4}$ N. 7 $\frac{1}{2}$ miles, Thatcher's Island Light, N. 8 $\frac{1}{2}$ miles; 4 mile SW. from No. 215.	32	70 $\frac{1}{2}$	63	55 $\frac{1}{2}$	D.
220	do	42	32	70	35	Eastern Point Light N. $\frac{1}{4}$ N. 4 $\frac{1}{2}$ miles, Thatcher's Island Light N. by E. $\frac{1}{2}$ E. 6 $\frac{1}{2}$ miles.	42				T.
221	Sept. 21	42	32	70	31	Eastern Point Light NW $\frac{1}{4}$ N. 6 $\frac{1}{2}$ miles, Thatcher's Island Light N. by W. $\frac{1}{4}$ W. 5 $\frac{1}{2}$ miles.	37-38	67 $\frac{1}{2}$	62	49 $\frac{1}{2}$	D.
222	do					3 mile SE. by E. $\frac{1}{2}$ S. from No. 221.	40				T.
223	do					About $\frac{1}{2}$ miles E. $\frac{1}{2}$ S. from No. 221.	47				T.
224	do					$\frac{1}{2}$ mile E. by S. from No. 223.	47				T.
225	do	42	33 $\frac{1}{2}$	70	35 $\frac{1}{2}$	Eastern Point Light NW $\frac{1}{4}$ W. 3 $\frac{1}{2}$ miles, Thatcher's Island Light N. by E. $\frac{1}{2}$ E. 5 miles.	26	71 $\frac{1}{2}$	62 $\frac{1}{2}$	53	Tan.
226	Sept. 23	42	36	70	36	Off Cape Ann, Eastern Point Light W. by S. $\frac{1}{2}$ S. 3 miles, Thatcher's Island Light NE. 2 $\frac{1}{2}$ miles.	18				D. and Tan.
227	do	42	33 $\frac{1}{2}$	70	40	Off Gloucester, Eastern Point Light NNE. 1 $\frac{1}{2}$ miles, S. end Kettle Island E. by S. $\frac{1}{2}$ S. 2 $\frac{1}{2}$ miles.	23	64 $\frac{1}{2}$	60 $\frac{1}{2}$	58	D. and Tan.
228	do					Eastern Point Light NE. 2 $\frac{1}{2}$ miles, $\frac{1}{2}$ miles SW. from No. 227.	19				D. and Tan.
229	do					Eastern Point Light NE. by N. $\frac{1}{4}$ N. $\frac{1}{2}$ mile, $\frac{1}{2}$ mile N. of No. 227.	19				D.
230	do					S. end Kettle Island N. $\frac{1}{4}$ W. $\frac{1}{2}$ mile, between Nos. 208 and 209 Gloucester Harbor, just outside Fresh Water Cove, Eastern Point Light SE.	21	59 $\frac{1}{2}$	60 $\frac{1}{2}$	57 $\frac{1}{2}$	D.
231	do					Eastern Point Light N. $\frac{1}{4}$ W. 4 $\frac{1}{2}$ miles, Thatcher's Island Light NNE. $\frac{1}{2}$ E. 8 $\frac{1}{2}$ miles.	7				T.
232	Sept. 24	42	30 $\frac{1}{2}$	70	38	Light N. by W. $\frac{1}{4}$ W. from No. 232.	45	62 $\frac{1}{2}$	61 $\frac{1}{2}$	42	D.
233	do					$\frac{1}{2}$ mile NE. by E. from No. 232; on chart NW. from No. 232, which is probably correct.	45				T.
234	do					Eastern Point Light N. by W. $\frac{1}{4}$ W. 1 $\frac{1}{2}$ miles, Thatcher's Island Lights NE. $\frac{1}{4}$ N. 5 $\frac{1}{2}$ miles, close to No. 135.	43				T.
235	do	42	33 $\frac{1}{2}$	70	39	Eastern Point Light NW by N. 9 $\frac{1}{2}$ miles, Thatcher's Island Lights N. $\frac{1}{4}$ W. 10 $\frac{1}{2}$ miles.	22				Tan.
236	Sept. 26	42	28	70	31	Eastern Point Light NW by N. 9 $\frac{1}{2}$ miles, Thatcher's Island Lights N. $\frac{1}{4}$ W. 10 $\frac{1}{2}$ miles.	28	63 $\frac{1}{2}$	61	48 $\frac{1}{2}$	D.
237	do	42	31	70	29	Eastern Point Light NW $\frac{1}{4}$ W. 9 miles, Thatcher's Island Lights R. by W. $\frac{1}{4}$ W. 8 $\frac{1}{2}$ miles.	38	66	61 $\frac{1}{2}$	40 $\frac{1}{2}$	D.
238	do	42	30 $\frac{1}{2}$	70	38	Eastern Point Light N. by W. $\frac{1}{4}$ miles, Thatcher's Island Lights NNE. $\frac{1}{4}$ E. 7 $\frac{1}{2}$ miles, close to No. 232.	43	69	61 $\frac{1}{2}$		T.

DREDGINGS BY SPEEDWELL, 1879.

239	1879. July 21	41	51	70	14	Cape Cod Bay, Wood End Light N. 15° E., Indian Hill N. 75° W.	13	70 $\frac{1}{2}$	67	65 $\frac{1}{2}$	D.
240	do	41	52 $\frac{1}{2}$	70	15	Wood End Light N. 19° E., Rocky Point N. 74° W.	18	69 $\frac{1}{2}$	67	64 $\frac{1}{2}$	T.
241	do	41	57	70	12	Wood End Light N. 16° E., Billingsgate Light S. 55° E.	19				T.
242	do	41	59	70	13	Race Point Light N. 9° W., Cape Cod Light N. 66° E.	21	72	67	63 $\frac{1}{2}$	T.
243	do	42	01	70	12	Race Point Light N. 25° W., Wood End Light N. 58° E.	20	69	66 $\frac{1}{2}$	64 $\frac{1}{2}$	T.
244	July 22	42	04 $\frac{1}{2}$	70	15 $\frac{1}{2}$	Race Point Light S. 50° E. (dredge) 1 mile, (trawl) 1 $\frac{1}{2}$ miles.	25-30	70	58	{ 40 } { 45 }	D. and T.
245	do	{ 42 } 08 42	{ 07 $\frac{1}{2}$ } 07 $\frac{1}{2}$	70	13 $\frac{1}{2}$	{ Race Point Light S. 27° E. (dredge) $\frac{5}{8}$ miles, S. 7 W. (trawl) 4 miles.	28				D. and T.

DREDGINGS BY SPEEDWELL, 1879—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.		Apparatus used.
							Air.	Surface.	
246	1879, July 25	42° 06'	70° 14'	Race Point Light S. 11° E. 2½ miles, "Spider Ground"	28	Fine gray sand.	66	63	D.
247	do	42° 07'	70° 15½'	Race Point Light S. 20° E. 3½ miles	34	do	66	63	D.
248	do	42° 07'	70° 14'	Race Point Light S. 10° W. 3½ miles	32	do	66½	63½	D.
249	do	42° 08½'	70° 13'	Race Point Light S. 13° W. 4½ miles	30	Coarse sand	65	62½	T.
250	do	42° 09'	70° 13'	Race Point Light S. 9° W. 5½ miles	30	do	66½	62½	T.
251	do	42° 10'	70° 10½'	Race Point Light S. 23° W. 6½ miles	24½	Coarse sand and gravel	65½	60½	T.
252	do	42° 09'	70° 09½'	Race Point Light S. 34° W. 6½ miles	27	Fine gray sand and gravel	66½	62½	T.
253	July 28	41° 57'	70° 17½'	Cape Cod Bay, "Fishing Ledger," Wood End Light N. 50° E. 7 miles.	17	Rocky	72	65	D.
254	do	do	do	do	21	Sandy	75	65	D.
255	do	do	do	do	18	Rocky	76	66	D.
256	do	do	do	do	16	do	78	68	D.
257	do	41° 55'	70° 20'	Cape Cod Bay, Wood End Light NE. 4° E. 9½ miles	20	Soft mud	72	64	T.
258	do	41° 57½'	70° 23½'	Cape Cod Bay, Wood End Light ENE. 10½ miles	24	Blue mud	71	64	T.
259	do	41° 58½'	70° 19'	Cape Cod Bay, Wood End Light ENE. 7½ miles	25	Green mud	74	65	T.
260	do	42° 00'	70° 15'	Cape Cod Bay, Wood End Light ENE. 3½ miles	26	Mud	74	65	T.
261	do	42° 00'	70° 15'	Cape Cod Bay, Wood End Light ENE. 3½ miles	26	Mud	74	65	T.
262	July 29	42° 11'	69° 57'	Off Cape Cod, Race Point Light S. 65° W. 14 miles	80	Blue mud	71	65½	D.
263	do	do	do	do	83	do	71	65½	D.
264	do	42° 10'	69° 56½'	Off Cape Cod, Race Point Light S. 65° W. 15 miles	80	do	71	65½	T.
265	do	42° 09½'	69° 57'	Off Cape Cod, Cape Cod Light S. 30° W. 8 miles	72	Gravel	71	65½	T.
266	do	42° 12½'	69° 50'	Off Cape Cod, Cape Cod Light S. 42° W. 13 miles	120	Blue mud	70½	66½	T.
267	do	42° 13'	69° 40'	Off Cape Cod, Race Point Light S. 81½° W. 26 miles	135	do	71	68½	T.
268	July 31	42° 12'	69° 40'	Off Cape Cod, Race Point Light S. 84½° W. 26 miles	129	do	71	67½	T.
269	do	42° 12'	69° 40'	Off Cape Cod, Race Point Light S. 67½° W. 9 miles	53	Gravel	70½	64½	T.
270	do	42° 06'	69° 55½'	Off Cape Cod, Cape Cod Light S. 60½° W. 7 miles	42	Blue sand and gravel	71	64½	T.
271	Aug. 1	42° 06½'	70° 18'	Off Cape Cod, Race Point Light S. 12° W. 2½ miles	34	Fine yellow sand	70½	66½	T.
272	do	42° 07'	70° 19'	Off Cape Cod, Race Point Light S. 25° W. 3 miles	34	Yellow sand	70	63	D.
273	do	42° 07½'	70° 09½'	Off Cape Cod, Race Point Light S. 40° W. 5½ miles	25	Coarse yellow sand and gravel	69	67	D.
274	do	42° 09½'	70° 05'	Off Cape Cod, Cape Cod Light S. 11° E. 7 miles	30	Coarse yellow sand and broken shells.	73½	68½	D.
275	do	do	do	do	29½	Green mud	72	66½	T.
276	do	42° 08½'	70° 00'	Off Cape Cod, Cape Cod Light S. 20° W. 6½ miles	47	Blue mud	71	66	T.
277	do	42° 02'	70° 15'	Cape Cod Bay, Wood End Light S. 70° E. 3 miles	28	Sand and shells	74	74½	T.
278	Aug. 4	42° 09½'	70° 15'	Provincetown Harbor, Long Point Light N. 75° E. 4 miles	9	Sandy	70	63	D.
279	do	42° 09½'	70° 15'	On Stellwagen's Bank, Race Point Light S. 6½ miles	13-13½	Sand	74	63	D.
280	do	42° 09½'	70° 16½'	On Stellwagen's Bank, Race Point Light S. 17° E. 6½ miles	12-13½	Yellow sand and gravel	76	44	T.
281	do	42° 12'	70° 16½'	On Stellwagen's Bank, Race Point Light S. 12° E. 8½ miles	14	Fine yellow sand and broken shells.	76	62, 8	D.

282	...do...	42 13	70 13 ¹	On Stellwagen's Bank, Race Point Light S. 3° W. 9 ¹ miles.	131 ¹	Sand and gravel	72 ¹	61 ¹	43	D.
283	...do...	42 09 ¹	70 22	Southwest of Stellwagen's Bank, Race Point Light S. 44° E. 8 ¹ miles.	31	Sand and green mud	70. 7	65 ¹	38 ¹	D.
284	...do...	42 10	70 22	do	31	Green mud	70. 7	65 ¹	39	T.
285	Aug 6	42 12	70 25	Southwest of Stellwagen's Bank, Race Point Light S. 44° E. 11 miles.	35 ¹	Green mud	69	68	39	D.
286	...do...	42 10 ¹	70 23	West of Stellwagen's Bank, Race Point Light S. 14° E. 14 miles.	37	do	71	67	39 ¹	D.
287	...do...	42 17 ¹	70 25 ¹	West of Stellwagen's Bank, Race Point Light S. 20° E. 16 miles.	47 ¹	do	68	67 ¹	38 ¹	T.
288	...do...	42 20	70 27	West of Stellwagen's Bank, Race Point Light S. 20° E. 19 miles.	33	Fine blue sand and shells.	72	67. 3	38 ¹	T.
289	...do...	42 19	70 25	Same as last in Record Book; nearly 2 miles SE. on chart	45	Fine gray sand	69 ¹	68 ¹	38	T.
290	Aug 11	42 04 ¹	70 16	Mouth Cape Cod Bay, Race Point Light S. 86° E. 1 ¹ miles.	31	do	72	63 ¹	38	D.
291	do	42 04 ¹	70 16 ¹	Mouth Cape Cod Bay, Race Point Light S. 55° E. 1 ¹ miles.	30	do	69	64	40	T.
292	do	42 03 ¹	70 18 ¹	Mouth Cape Cod Bay, Race Point Light N. 85° E. 2 ¹ miles.	27	Blue mud, fine sand	69	65	41	D.
293	do	42 03 ¹	70 19 ¹	Mouth Cape Cod Bay, Race Point Light N. 85° E. 2 ¹ miles.	29	Green mud	66	65 ¹	39 ¹	D.
294	do	42 03 ¹	70 23	Mouth Cape Cod Bay, Race Point Light N. 86° E. 6 ¹ miles.	26	do	66 ¹	66	39	T.
295	do	42 03 ¹	70 24 ¹	Mouth Cape Cod Bay, Race Point Light N. 89° E. 7 ¹ miles.	26	do	67	65 ¹	39 ¹	R. D.
296	do	42 02 ¹	70 26	Mouth Cape Cod Bay, Race Point Light N. 89° E. 9 miles.	26	do	68 ¹	65	39	T.
297	do	42 02 ¹	70 29	Mouth Cape Cod Bay, Race Point Light N. 80° E. 11 miles.	22	Fine sand	69	65	39 ¹	T.
298	Aug 20	42 01 ¹	70 32	Mouth Cape Cod Bay, Gunnet Point Light S. 73° W. 3 ¹ miles.	16	Fine brown sand	64	61 ¹	53 ¹ (?)	D.
298a	do	42 01 ¹	70 30	Mouth Cape Cod Bay, Gunnet Point Light S. 88° W. 4 ¹ miles.	20	Brown sand and pebbles	68	59	41	D.
299	do	42 01 ¹	70 30	Mouth Cape Cod Bay, Gunnet Point Light S. 74° W. 4 ¹ miles.	21	Fine brown sand	66	61 ¹	45	T.
300	do	42 01 ¹	70 29	Mouth Cape Cod Bay, Gunnet Point Light S. 75° W. 5 miles, 3 mile S. of No. 297.	20	Brown sand and pebbles	68	61 ¹	45	T.
301, 301a	do	42 01 ¹	70 20	Mouth Cape Cod Bay, Race Point Light N. 65° E. 5 miles	27	Soft brown mud	66	60	42 ¹	D. and R. D.
302	Aug 21	42 12 ¹	69 46	Off Cape Cod, Cape Cod Light S. 51° W. 16 ¹ miles	124	Fine brown mud	68	60	41	D.
303	do	42 11 ¹	69 47	Off Cape Cod, Cape Cod Light S. 51° W. 15 miles	132	Soft brown mud	71	61 ¹	41	T.
304	do	42 10	69 45	Off Cape Cod, Cape Cod Light S. 61° W. 15 miles	132	do	75 ¹	61 ¹	41	T.
305	do	42 09 ¹	69 41	Off Cape Cod, Cape Cod Light S. 68° W. 18 miles	118	do	69	61	41	T.
306	Aug 25	42 06 ¹	70 20	Race Point Light S. 50° E. 5 miles	30	Blue mud	63	61	41	T.
307	do	42 06 ¹	70 18	Race Point Light S. 46° E. 4 ¹ miles	31	Blue mud and fine sand	65	61 ¹	43 ¹	T.
308	do	42 08 ¹	70 18	Race Point Light S. 28° E. 5 ¹ miles, S. edge Stellwagen's Bank.	26	Fine sand and broken shells.	64	61 ¹	41	D.
309	do	42 08 ¹	70 17	Race Point Light S. 23° E. 5 ¹ miles, E. of No. 308.	27	Fine yellow sand	66	60 ¹	40 ¹	T.
310	Aug 29	42 01	70 11	Cape Cod Bay, Wood End Light N. 33° W. 4 miles	21	Blue mud, fine sand	63	60 ¹	47 ¹	D.
311	do	42 00	70 10	Cape Cod Bay, Wood End Light N. 36° W. 14 miles	16	do	67 ¹	61 ¹	49	R. D.
312	do	41 59 ¹	70 09	Cape Cod Bay, Wood End Light N. 41° W. 24 miles	15	Mud and sand	63	62	50	R. D.
313	do	41 58	70 09	Cape Cod Bay, Wood End Light N. 29° W. 33 miles	15	Blue mud	67	61	50 ¹	R. D.
314	do	41 56	70 07	Cape Cod Bay, Wood End Light N. 31° W. 6 miles	10	Coarse sand	67	61 ¹	61	R. D.
315	do	41 55	70 07	Cape Cod Bay, Wood End Light N. 25° W. 7 miles	6	Coarse sand and gravel	66	63 ¹	56	T.
316	do	41 56 ¹	70 06 ¹	Cape Cod Bay, Wood End Light N. 36° W. 5 ¹ miles	8	do	69	62	63	D.
317	Aug 30	42 02	70 14	Cape Cod Bay, Race Point Light N. 3° W. 13 miles	25	Blue mud	59	60	44 ¹	D.
318	do	42 01 ¹	70 15	Cape Cod Bay, Race Point Light N. 14° E. 23 miles	28	do	61	61 ¹	44 ¹	T.
319	do	42 02 ¹	70 15	Cape Cod Bay, Race Point Light N. 10° E. 13 miles	26 ¹	do	60	60 ¹	44 ¹	T.
320	do	42 02 ¹	70 15	Cape Cod Bay, Race Point Light N. 38° E. 13 miles	29 ¹	Fine gray sand	63 ¹	61	44 ¹	R. D.
321	do	42 03	70 15	Cape Cod Bay, Race Point Light N. 62° E. 1 mile	29 ¹	do	65	61	44 ¹	D.
322	Sept. 1	42 12 ¹	70 01	Off Cape Cod, Cape Cod Light S. 9° W. 10 miles	67	Speckled sand, broken shells.	66	60	40 ¹	D.
323	do	42 13 ¹	70 01 ¹	Off Cape Cod, Cape Cod Light S. 6° W. 11 miles	60	Speckled sand	67 ¹	58	40 ¹	T.

DREDGINGS BY SPEDWELL, 1879—Continued.

Serial number.	Date.	Latitude.	Longitude.	Locality.	Depth in fathoms.	Nature of bottom.	Temperatures.			Apparatus used.
							Air.	Surface.	Bottom.	
324	1879. Sept. 1	42° 12'	70° 03'	Off Cape Cod, Cape Cod Light S. 2° W. 11 miles.	45	Coarse sand, black specks, broken shells.	67	61	40½	T.
325	do	42° 14'	70° 00½	Off Cape Cod, Cape Cod Light S. 8° W. 13 miles.	83	Green mud.	67	61	40½	T.
326	do	42° 14½	70° 02	Off Cape Cod, Cape Cod Light S. 4° W. 12½ miles.	75	do	70	59½	40½	A. G. T.
327	Sept. 6	42° 11'	70° 12½	S. and Stellwagen's Bank, Race Point Light S. 11° W. 7½ miles.	17	Coarse sand, black specks.	61½	60	44½	D.
328	do	42° 10'	70° 13	Off S. and Stellwagen's Bank, Race Point Light S. 11° W. 6½ miles.	23	do	72	60½	42	O. T.
329	do	42° 09'	70° 12	Off S. and Stellwagen's Bank, Race Point Light S. 17° W. 5½ miles.	26	Fine brown sand, pebbles.	67½	60	42	R. D.
330	do	42° 09½	70° 13	Off S. and Stellwagen's Bank, Race Point Light S. 8° W. 6 miles.	26	do	68	60	42	T.
331	do	42° 09½	70° 14	Off S. and Stellwagen's Bank, Race Point Light S. 2° W. 5½ miles.	28	Fine brown sand, black specks.	67	60½	41½	T.
332	do	42° 09'	70° 15	Off S. and Stellwagen's Bank, Race Point Light S. 0° E. 5½ miles.	28	Fine brown sand, shells.	70	61	42	T.
333	do	42° 08½	70° 16½	Off S. and Stellwagen's Bank, Race Point Light S. 18° E. 5½ miles.	27	do	71	61	42½	R. D.
334	do	42° 08½	70° 18	Off S. and Stellwagen's Bank, Race Point Light S. 28° E. 5½ miles.	27	Fine yellow sand	74	61½	42	A. G. T.
335	Sept. 9	41° 58½	70° 34½	Off Plymouth, Gunnet Point Light N. 30° W. 1½ miles.	7	Green mud, sand, with dead eel-grass.	62	61½	55	D.
336	do	41° 58	70° 33½	Off Plymouth, Gunnet Point Light N. 40° W. 2½ miles.	11½	Brown sand, specks, eel-grass.	69	61½	50	T.
337	do	41° 57½	70° 30½	Off Plymouth, Gunnet Point Light N. 58° W. 4½ miles.	16	Green mud and sand	70	62	47½	D.
338	do	41° 57½	70° 28	Off Plymouth, Gunnet Point Light N. 68° W. 6½ miles.	18	Sand, blue mud	71	62½	49½	T.
339	do	41° 54	70° 28	Cape Cod Bay, Manomet Point N. 67° W. 3½ miles, 3½ miles S. of No. 338.	15½	Mud and sand	75	63	47½	T.
340	do	41° 51	70° 27½	Cape Cod Bay, Manomet Point N. 38° W. 6 miles.	14	Brown sand and mud	69½	63	49½	D.
341	do	41° 51½	70° 27	Cape Cod Bay, Manomet Point N. 58° W. 9 miles.	15½	Green mud, sand.	69½	63½	48	D.
342	Sept. 10	42° 16'	69° 56	Off Cape Cod, Cape Cod Light S. 22° W. 14 miles.	94	Brown mud.	63½	58½	41½	T.
343	do	42° 17'	69° 51	Off Cape Cod, Cape Cod Light S. 33° W. 17½ miles.	116	do	63	57	41½	T.
344	do	42° 19'	69° 47½	Off Cape Cod, Cape Cod Light S. 35° W. 15 miles (20 miles on original chart).	130	do	64	57½	41½	T.
345	Sept. 13	42° 19½	70° 45	Off Boston Harbor, Minot's Ledge Light S. 3½ miles.	16	Speckled sand and shells.	60	61½	46½	D.
346	do	42° 16'	70° 38	Massachusetts Bay, Minot's Ledge Light W. 5½ miles.	22	Pebbles and broken shells.	66½	61½	44½	T.
347	do	42° 13½	70° 33½	Massachusetts Bay, Minot's Ledge Light N. 66° W. 9 miles.	20	Speckled sand	65	61½	46½	T.
348	do	42° 09½	70° 32½	Massachusetts Bay, Standish Monument (near Duxbury) N. 35° W. 10 miles.	16½	Gravel and sand	66	62½	40½	D.

	349	42	10 $\frac{1}{2}$	70	29	Standish Monument S. 36° W. 13 miles	26	Sand and mud	65	61 $\frac{3}{4}$	43 $\frac{1}{2}$	O. T.
...	do	...	...	70	25	Standish Monument S. 56° W. 13 $\frac{1}{2}$ miles	31	Blue mud	72 $\frac{3}{4}$	61 $\frac{3}{4}$	43 $\frac{1}{2}$	D.
...	do	...	...	70	22	Race Point Light S. 74° E. 6 miles	30	do	73	62 $\frac{1}{2}$	45 $\frac{1}{2}$	A. G. T.
...	do	...	...	70	22	Cape Cod Bay, Billingsgate Light S. 53° E. 4 miles	10 $\frac{1}{2}$	Sand and gravel	61 $\frac{1}{2}$	61 $\frac{1}{2}$	44 $\frac{1}{2}$	D.
...	do	...	...	70	10 $\frac{1}{2}$	Cape Cod Bay, Billingsgate Light S. 78° E. 5 miles	14	Green mud	61 $\frac{1}{2}$	63 $\frac{3}{4}$	49 $\frac{1}{2}$	D.
...	do	...	...	70	10	Cape Cod Bay, Billingsgate Light N. 74° E. 6 miles	7	Coarse yellow sand	76 $\frac{1}{2}$	62 $\frac{1}{2}$	62	D.
...	do	...	...	70	12	Cape Cod Bay, Billingsgate Light N. 56° E. 7 $\frac{1}{2}$ miles	7	Coarse sand, pebbles	66	61 $\frac{1}{2}$	61 $\frac{1}{2}$	D.
...	do	...	...	70	12	Cape Cod Bay, Billingsgate Light N. 48° E. 5 $\frac{1}{2}$ miles	7 $\frac{1}{2}$	Fine brown sand	66	61 $\frac{1}{2}$	64	T.
...	do	...	...	70	10	Cape Cod Bay, Billingsgate Light S. 63° E. 5 $\frac{1}{2}$ miles	15	Fine brown sand	65	65 $\frac{1}{2}$	64	T.
...	do	...	...	69	22	Off Cape Cod, Cape Cod Light S. 86° W. 30 miles	105	Blue mud	65	61 $\frac{1}{2}$	48 $\frac{1}{2}$	T.
...	do	...	...	69	22	Off Cape Cod, Cape Cod Light S. 89° W. 30 miles	105	Green mud	67	58 $\frac{1}{2}$	57	T.
...	do	...	...	69	28	Off Cape Cod, Cape Cod Light N. 88° W. 26 miles	102	Gray mud	65	58 $\frac{1}{2}$	57	T.
...	do	...	...	69	28	Off Cape Cod, Cape Cod Light N. 89° W. 26 miles	106	do	65	58 $\frac{1}{2}$	57	T.
...	do	...	...	69	34 $\frac{1}{2}$	Off Cape Cod, Cape Cod Light N. 86° W. 21 miles	106	do	62 $\frac{1}{2}$	59 $\frac{1}{2}$	57	T.
...	do	...	...	69	36	Off Cape Cod, Cape Cod Light N. 84° W. 20 miles	108	do	66	59 $\frac{1}{2}$	57	T.
...	do	...	...	69	44	Off Cape Cod, Cape Cod Light N. 75° W. 15 miles	70	Mud, fine gravel	65	60	59	T.
...	do	...	...	69	44	Off Chatham, Chatham Light N. 45° W. 2 $\frac{1}{2}$ miles	74 $\frac{1}{2}$	Hard sand, broken shells	65	60	59	T.
...	do	...	...	69	51	Off Chatham, Chatham Light N. 55° W. 4 $\frac{1}{2}$ miles	11	Coarse sand	63	61 $\frac{1}{2}$	57	T.
...	do	...	...	69	53	Off Chatham, Chatham Light N. 55° W. 4 $\frac{1}{2}$ miles	11	Fine sand	63	61	57	T.
...	do	...	...	69	49	Off Chatham, Chatham Light N. 67° W. 5 $\frac{1}{2}$ miles	12	do	63 $\frac{1}{2}$	61 $\frac{1}{2}$	57	D.
...	do	...	...	69	48	Off Chatham, Chatham Light N. 84° W. 6 miles	15	Coarse sand, gravel	63	61 $\frac{1}{2}$	57	D.
...	do	...	...	69	47 $\frac{1}{2}$	Off Chatham, Chatham Light S. 78° W. 6 $\frac{1}{2}$ miles	18	do	64	61 $\frac{1}{2}$	57	T.
...	do	...	...	69	42	Off Chatham, Chatham Light N. 75° W. 12 miles	18	Speckled sand	61	37 $\frac{1}{2}$	61	T.
...	do	...	...	69	35	Off Chatham, Chatham Light N. 72° W. 16 miles	34 $\frac{1}{2}$	Coarse speckled sand	66	61 $\frac{1}{2}$	57	T.
...	do	...	...	69	28 $\frac{1}{2}$	Off Chatham, Chatham Light W. 21 miles	70	Sand and pebbles	61	59	57	T.
...	do	...	...	69	59	Off Cape Cod, Cape Cod Light S. 32° W. 5 miles	42	Fine gray sand, black specks,	58	54	44	T.
...	do	...	...	69	54	Off Cape Cod, Cape Cod Light S. 75° W. 6 $\frac{1}{2}$ miles	46	Fine sand, broken shells	64	54 $\frac{1}{2}$	43	T.
...	do	...	...	69	53 $\frac{1}{2}$	Off Cape Cod, Cape Cod Light S. 72° W. 7 miles	46	Coarse sand	59	54	45 $\frac{1}{2}$	T.
...	do	...	...	69	54	do	46	do	59	54	45 $\frac{1}{2}$	D.
...	do	...	...	69	44 $\frac{1}{2}$	Off Cape Cod, Cape Cod Light S. 85° W. 13 miles	94	Brown mud	58	57	41 $\frac{1}{2}$	D.
...	do	...	...	69	44 $\frac{1}{2}$	Off Cape Cod, Cape Cod Light S. 85° W. 17 $\frac{1}{2}$ miles	96	do	58	57	41 $\frac{1}{2}$	D.

A series of temperature observations was made by the Speedwell on September 25 and 29, 1879. These had separate numbers from No. 1 to No. 25, and as no dredgings or natural-history observations were made, they have been placed after the tables of dredging localities. Their localities, &c., will be found on the following page (38), and the serial temperatures taken on those days are placed on page 43, at the end of the tables of serial temperatures taken in the course of dredging expeditions.

* TEMPERATURE OBSERVATIONS BY THE SPEEDWELL, SEPTEMBER 25 AND 29, 1879.

Serial number.	Date.	Locality.	Depth in fathoms.	Temperatures.		
				Air.	Surface.	Bottom.
1	1879.			o	o	o
2	Sept. 25	Long Point WNW. $\frac{3}{4}$ mile.....	17	.....	55 $\frac{1}{2}$	47 $\frac{4}{5}$
3	25	Wood End Light NW. $\frac{1}{4}$ mile.....	21	.....	55	47
4	29	Wood End Light NE. $\frac{1}{4}$ mile.....	23	.....	59	45
5	29	Wood End Light N. 80° E. 2 miles.....	24 $\frac{1}{2}$	.....	57 $\frac{1}{2}$	44 $\frac{1}{2}$
6	29	Wood End Light N. 55° E. 3 $\frac{1}{4}$ miles.....	21	.....	57 $\frac{1}{2}$	45
7	29	Wood End Light N. 48° E. 5 $\frac{1}{2}$ miles.....	21	.....	57 $\frac{1}{2}$	45 $\frac{1}{2}$
8	29	Wood End Light N. 45° E. 7 $\frac{1}{4}$ miles.....	19 $\frac{1}{2}$	.....	58 $\frac{1}{2}$	46 $\frac{1}{5}$
9	29	Wood End Light N. 50° E. 7 $\frac{1}{4}$ miles.....	19 $\frac{1}{2}$	.....	58 $\frac{1}{2}$	46
10	29	Wood End Light N. 60° E. 6 $\frac{1}{4}$ miles.....	24	.....	59 $\frac{1}{2}$	44 $\frac{1}{2}$
11	29	Wood End Light N. 85° E. 6 miles.....	26	69 $\frac{1}{2}$	58	44
12	29	Wood End Light S. 75° E. 5 $\frac{1}{2}$ miles.....	30	69 $\frac{1}{2}$	58 $\frac{1}{2}$	44
13	29	Race Point Light S. 71° E. 3 $\frac{1}{2}$ miles.....	33	66	.....	44
14	29	Race Point Light S. 45° E. 4 $\frac{1}{2}$ miles.....	34	66	57 $\frac{1}{2}$	44 $\frac{1}{2}$
15	29	Race Point Light S. 32° E. 6 miles.....	11	67	58	51 $\frac{1}{2}$
16	29	Race Point Light S. 13° E. 5 $\frac{1}{4}$ miles.....	23	63 $\frac{1}{2}$	57 $\frac{1}{2}$	52 $\frac{1}{2}$
17	29	Race Point Light S. 10° W. 6 miles.....	19	62 $\frac{1}{2}$	58	49
18	29	Race Point Light S. 30° W. 6 $\frac{1}{4}$ miles.....	26	63	57 $\frac{1}{2}$	46 $\frac{1}{2}$
19	29	Race Point Light S. 51° W. 8 $\frac{1}{4}$ miles.....	28	62 $\frac{1}{2}$	57	45
20	29	Race Point Light S. 58° W. 9 $\frac{1}{4}$ miles.....	49	62 $\frac{1}{2}$	57 $\frac{1}{2}$	43 $\frac{1}{2}$
21	29	Race Point Light S. 70° W. 9 $\frac{1}{4}$ miles.....	32	62 $\frac{1}{2}$	57	44
22	29	Race Point Light S. 66° W. 5 $\frac{1}{2}$ miles.....	21	64	57	45
23	29	Race Point Light S. 42° W. 5 $\frac{1}{2}$ miles.....	28	62 $\frac{1}{2}$	56 $\frac{4}{5}$	46
24	29	Race Point Light S. 18° W. 2 $\frac{1}{4}$ miles.....	33	.....	57 $\frac{1}{2}$	44
25	29	Race Point Light S. 83° E. 2 miles.....	30	61	58	44
	29	Race Point Light N. 16° E. 2 $\frac{1}{4}$ miles.....	27	61	58	44 $\frac{1}{2}$

* See pages 37 and 43.

SERIES OF TEMPERATURES TAKEN BY THE SPEEDWELL IN 1877, 1878, AND 1879.

[A + above the temperature indicates that it is that of the bottom, when that precise depth is not in the table; a Δ before the temperature indicates that the precise depth at which it was taken will be found in column A.]

Serial number.				Latitude.		Longitude.		Depth in fathoms.		Temperatures.													A.					
Date.				°	'	°	'	Air.	Surface.	5 fathoms.	10 fathoms.	15 fathoms.	20 fathoms.	25 fathoms.	30 fathoms.	35 fathoms.	40 fathoms.	45 fathoms.	50 fathoms.	55 fathoms.	60 fathoms.	70 fathoms.	80 fathoms.	90 fathoms.	100 fathoms.	110 fathoms.	120 fathoms.	
1877.				°	'	°	'	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
Aug. 6	9		25			69	63.5					57½		52.5														°
6	10		20.5			69.5	64.5	60½	59½	54	50.5		55½															
6	11		20.5			70	64.5						55.5															
28	59		25	42	26	70	37	63.5	63½				Δ 47	43.5				48.5										
29	63		26			67½	66½	67	60½				34½															21
29	64		40																									
29	66		41			68.5	68						36.5				33.5											+ 37
Sept. 1	69		620	42	46	62	13	65½					52															
1878.																												
July 23	130		49			68	63		47										(1)									
23	131		45			68	62	60.5	46.5	43	41							38										7½
23	132		45			70	63	Δ 47.5	45½	43	41							38										19
26	135		25	42	33½	70	38½	58.5	49.5				44.5	40.5														
26	135 a		25			72							42.5	41	40													
29	137		53	42	33½	70	23½	65	57.5	51½	51½		45	46	42.5	40	40	38½										
Aug. 1	141		8½			63	57.5	53.5	44.5																			
1	145		8			63.5	56.5	Δ 54	51																			4
3	147		16	42	23	70	41½	67.5	56.5	45.5																		
3	149		19½			66	61½																					
3	150		7½			70	61	Δ 56.5	51.5																			4
8	153 a		17				62	52	48																			
15	154		38	42	35	70	31	69½	61.5	57½		42½	Δ 45	44½	42½	41.5	41.5	41.5										19.5

* Estimated.

SERIES OF TEMPERATURES TAKEN BY THE SPEEDWELL IN 1877, 1878, AND 1879—Continued.

Date.	Serial number.	Latitude.	Longitude.	Depth in fathoms.	Temperatures.																	A.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
					Air.	Surface.	5 fathoms.	10 fathoms.	15 fathoms.	20 fathoms.	25 fathoms.	30 fathoms.	35 fathoms.	40 fathoms.	45 fathoms.	50 fathoms.	60 fathoms.	70 fathoms.	80 fathoms.	90 fathoms.	100 fathoms.		110 fathoms.	120 fathoms.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
1878. Aug. 15	157	° 7	° 0	40	73	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°

6.5
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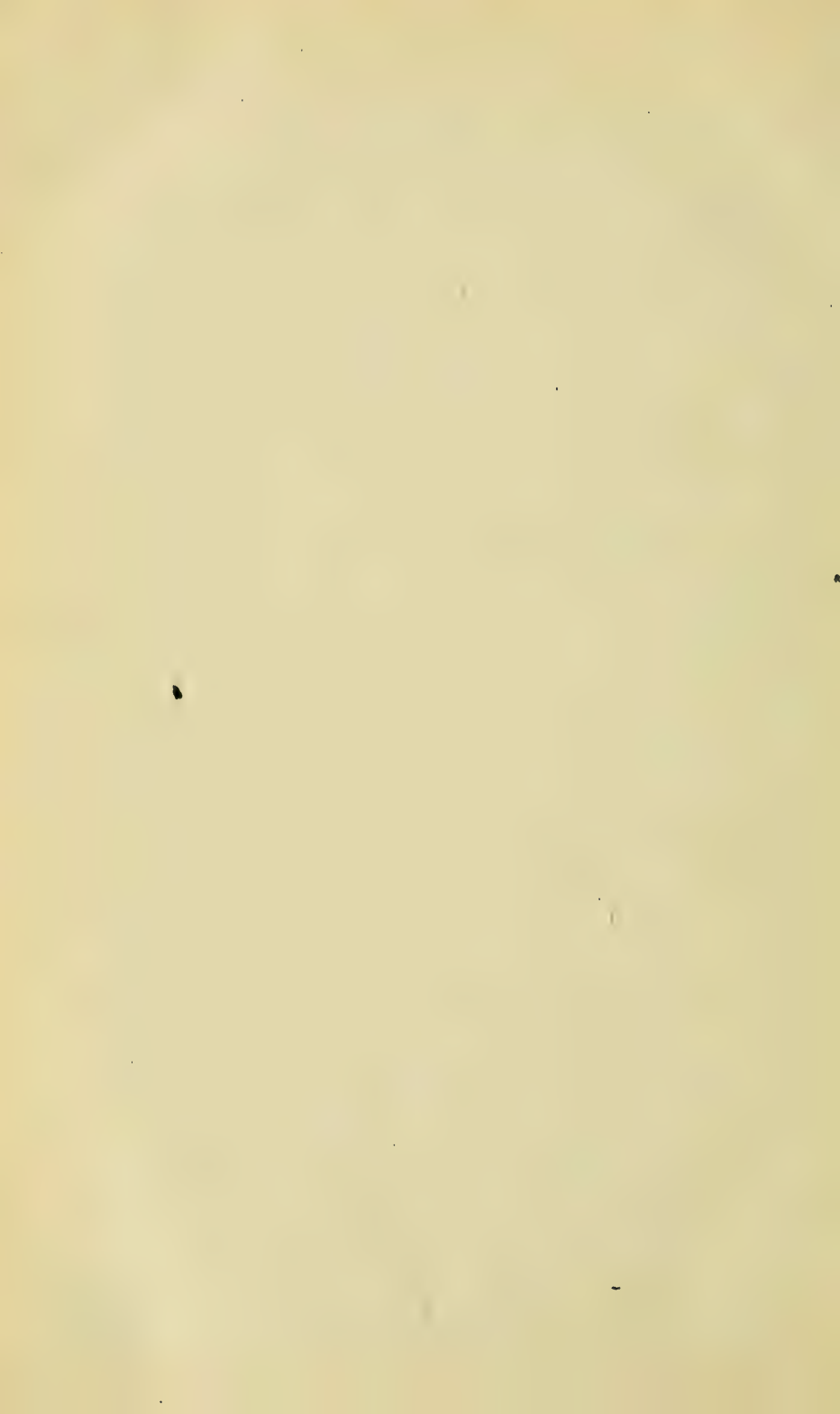
6.5

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7

6	265	42 12	70 25	35.5	69	66	Δ40	39	38.8	12
6	286	42 16 $\frac{1}{2}$	70 23	37	71	67	Δ39.9	39.2	38.8	19
6	287	42 17 $\frac{1}{2}$	70 25 $\frac{1}{2}$	47 $\frac{1}{2}$	68	67.2	38.7	38.8	38.8	16
6	288	42 20	70 27	33	72	67.3	Δ43.8	38.8	38.8	27
6	289	42 19	70 25	45	69.8	68.5	Δ39	38	38	13
25	307	42 06 $\frac{1}{2}$	70 18	31	65	61 $\frac{1}{2}$	43.5	43.5	43.5	14
25	308	42 08 $\frac{1}{2}$	70 18	26	61	61.2	41	41	41	13
25	309	42 08 $\frac{1}{2}$	70 17	27	66	60.8	40.8	40.8	40.8	14
29	312	41 59 $\frac{1}{2}$	70 09	15	65	62	Δ60	50.5	50.5	8
29	313	41 68	70 09	15	61	61	Δ60	50.5	50.5	8
30	317	42 02	70 14	25	59	60	44.8	44.8	44.8	13
30	318	42 01 $\frac{1}{2}$	70 15	28	61	61.2	42.5	42.5	42.5	14
30	319	42 02 $\frac{1}{2}$	70 15	26.5	60	60.5	44.8	44.8	44.8	13
30	320	42 02 $\frac{1}{2}$	70 15	29	63.5	61	Δ53.1	51	51	14.5
30	321	42 03	70 15	20.5	65	61	51	51	51	14.5
Sept. 1	322	42 1 $\frac{1}{2}$	70 01	67	66	60	Δ44	41	41	12
1	323	42 13 $\frac{1}{2}$	70 01 $\frac{1}{2}$	60	67.5	58	50	42	41.5	31
1	324	42 12 $\frac{1}{2}$	70 03	45	67	61	Δ42	42	40.8	22
1	325	42 14 $\frac{1}{2}$	70 00 $\frac{1}{2}$	83	67	60	51	Δ41	40.6	42
1	326	42 14 $\frac{1}{2}$	70 02	75	70	59.8	51	42	40.5	13
6	330	42 09 $\frac{1}{2}$	70 13	26	68	60	Δ51	41.8	41.8	14
6	331	42 09 $\frac{1}{2}$	70 14	28	67	60.5	Δ54	42	42	14
6	332	42 09	70 15	28	70	61	Δ51	42.8	42.8	14
6	333	42 08 $\frac{1}{2}$	70 16 $\frac{1}{2}$	27	71	61	Δ53	42	42	14
6	334	42 08 $\frac{1}{2}$	70 18	27	71	61.2	Δ53	42	42	14
9	335	41 58 $\frac{1}{2}$	70 34 $\frac{1}{2}$	7	62	61.2	55	55	55	14
9	336	41 58	70 33 $\frac{1}{2}$	11 $\frac{1}{2}$	69	61.2	50	50	50	14
9	337	41 57 $\frac{1}{2}$	70 30 $\frac{1}{2}$	16	70	62	52.8	47.2	47.2	14

* Estimated.







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